Broadband PCS and certain SMR providers to comply with our basic 911 and E911 requirements, while it excluded Air-To-Ground (Part 22, Subpart M) and Public Coast Stations (Pan 80. Subpart J) providers. in pan because their customers would not expect to access 911 services in the event of an emergency. The Commission noted that users of Air-To-Ground and Public Coast service providers likely would seeh emergency service using established radio communications channels.

14. We note we have required access to emergency services for TTY devices in tlie context of the requirements of Title II of the Americans with Disabilities Act and Section 255 of the Telecommunications Act of 1996.[43] TTY, which enables persons witli speech and hearing disabilities to communicate with others, however, tits tlie general criteria in that it is a voice equivalent. We seek comment on how the various services discussed herein relate to the provision of access to emergency services for persons with disabilities.

15. We also ask commenters, as they address tlie various services, to consider as part of their analysis the abilities of PSAPs to handle calls aiid information related to those services. Some of these services may raise new technical and other implementation issues

B. Individual Voice Services and Devices

16. In this section, we seek more specific comment on whether particular voice services and devices should be required to comply with our basic or enhanced 911 rules. Recognizing that our E911 rules were based on CMRS architecture, we also seeh comment on possible mechanisms other than those of our specific mobile wireless E911 rules to provide consumers with access to emergency services. We note, for example, that different accuracy requirements may be needed depending on the type of service. Commenters are reminded that in analyzing whether a particular service should be required to provide access to 911 services, we ask that they consider, at a minimum, the general criteria that we set out above.[44]

1. Mobile Satellite Service (MSS)

17. Introduction. We first seeh comment on 911 services in connection with MSS systems. As noted above, the issue of MSS emergency call procedures has been under consideration in a number of proceedings, and, although the Commission has refrained from requiring MSS to comply with any 911 requirements, the record developed in these proceedings provides the basis for the proposal, aiid detailed questions that follow. We first propose that all MSS licensees providing real-time, two-way, switched voice service that is interconnected with the public switched network establish national call centers to which all subscriber emergency calls are routed. Call center personnel would then determine tlie nature of the emergency and forward the call to an appropriate PSAP. We also seek to develop funher the record on implementation of enhanced 911 for satellite carriers in order to determine whether and when such service can reasonably be implemented.

18. *Legal Authority*. In other sections of this item, we seeh comment on the Coinmission's general authority to impose 911 and E911 requireinents on non-traditional classes of providers. As demonstrated in the above, the Commission has determined previously that MSS is subject to 911 requirements, but has not imposed such requireinents for other policy reasons. When the Commission adopted the E911 rules in 1996, it observed that "adding specific regulatory requirements to [the Mobile Satellite Service] may impede the development of the senice in ways that might reduce its ability to meet

[43] *See E911 First Report and Order*, 11 FCC Rcd at 18699-703 paras 47-53

[44] *See supra* paras. 12-14.

public safety needs."[45] Still, the Commission has stated that "the public interest is likely to require that all CMRS real time two-way voice communications services provide reasonable and effective access to emergency services. [and] we expect that CMRS voice MSS will eventually provide appropriate access to emergency senices. either voluntarily or pursuant to Commission's rules."[46] Although we believe tliat we do not need to revisit the **issue** of the Commission's authority to require satellite carrier compliance with 911 requirements, we invite comment on the matter in light of the general criteria for basic and enhanced 911 compliance proposed above.[47]

(i) Call Centers

19. Background. We seek comment on the use of call centers as a method for providing basic 91 I service while we further develop the record on E91 I implementation for satellite systems. We required covered terrestrial wireless carriers to provide basic 91 I as a preliminary step before implementing E911.[48] "Basic 91 I service" is the automatic transmission of all wireless 91 I calls. without ruspect to call validation processes. to a PSAP, or where no PSAP has been designated, to a statewide default answering point or appropriate local emergency authority."[49] As the International Bureau observed in the *Satellite EYI I Public Notice*, cellular carriers interconnect with local wirel'ne carriers at many points throughout their service areas, enabling them to make use of existing facilities to route 91 I calls directly to appropriate local PSAPs in the areas where the calls are placed."[50] **By** contrast. satellite systems have only a small number of (or just one) public switched network interconnection points in the United States and do not interconnect directly with most local wireline carriers. ICO Senices Limited and Inmarsat noted that this lack of interconnection points makes even basic 911 service difficult for satellite carriers."[51]

20. Recognizing that **MSS** licensees face some unique infrastructure considerations (relative to wireless and wireline carriers), the International Bureau also asked whether it would he possible for MSS operators to route emergency calls to central emergency-call bureau operators, who could redirect the calls to the appropriate PSAP in the caller's area.[52] A number of commenters express support for this concept, including satellite licensees and public safety organizations."[53] Inmarsat. on the other hand.

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[45] *E911 First Reporr and Order* at para. 83 (noting the expectation that 'CMRS voice MSS will eventually be required to provide appropriate access to emergency services"). *See also Wireless E911 First Recon* **Order.** 12 FCC Rcd 22665 at paras. 87-88.

[46] *Wireless E911First Recon* **Order.** 12 FCC Rcd 22665 at para **88**

[47] *See* ***supra*** paras. 12-14

[48] *See E911 Firsr* ***Repori and Order.*** 11 FCC Rcd 18676 at para 29-46: *Wireless €911First Recon* **Order,** 12 FCC Rcd 22665 at paras. 25-41; 47 C.F.R. § 20 18(b).

[49] *See* 47 C.F.R. § 20.18(b)

[50] *Satellite 911 Public Notice* at 3

[51] Inmarsat *Satellite 911 Public Notice* comments at 4 (arguing that basic 91 I should not be required lor MSS due to the small number of interconnection points): ICO *Satellite 911 Public Notice* comment: at n. 13.

[52] *Satellite 911 Public Notice* at 3, 5

[53] **See.** *e.g.*, ICO *Satellite 911 Public Notice* reply at 6-7 (observing that several MSS carriers already **use** their own form of a call center. and suggesting that call centers might be a good interim solution for ths MSS industry. until global standards are achieved). NTIA *Satellite 911 Public Notice* reply at 5-6 (suggesting that the Commission investigate the utility ofrequiring call centers for first generation MSS systems. due to the potential high cost *of* enhanced 911). APCO *Satellite 911 Public Notice* comments at 2 (suggesting using live operators as an interim measure (even though the organization prefers automatic location Inlormation). but pointing out that "callers may nor be able to describe their precise location, especially to a 'national' operator unfamiliar with the area in question").

dismisses as prohibitively espensrve the Commission's suggestion that a national PSAP database could correlate a caller's location with the nearest PSAP. since an MSS system would need to have ALI (which Inmarsat currently does not have)." Using operators instead of a PSAP database poses the same problem for Inmarsat because doing so still requires caller location information.[55] Other satellite licensees. however, already provide emergency calling services to their subscribers. For example. subscribers of Mobile Satellite Ventures Subsidiary LLC ("MSV") can dial 911 on their handsets for emergency assistance.[56] Trained operators at the MSV Reston call center request the caller's phone number and location, then cross reference the location information with a national PSAP database to determine which PSAP should bc connected to the caller.[57]

21. Globalstar customers dial 911 or any of a number of international emergency dial codes (such as 112) to access emergency assistance (the Emergency Call Assistance Service. or ECAS).[58] Dialing any of these codes connects the caller first to a recording and then (within 20 to 40 seconds) to a vendor-operated call center located in Canada.[59] Trained operators first ask for the caller's phone number. then instruct the caller how to use the handset to obtain his/her latitude and longitude coordinates. which the Globalstar system can determine to within 10 kilometers. 90% of the time (sometimes the accuracy may he higher or lower).[60] The operator enters rhe coordinates into a national PSAP database that finds the most appropriate PSAP based on the caller's location.[61] Globalstar argues that ECAS, not terrestrial wireless variety E911, is the more appropriate model for MSS emergency calling, and expresses support for the routing of emergency satellite calls to central operators."[62]

22. Discussion. We recognize that satellite carriers face unique technical difficulties (vis a vis terrestrial carriers) in implementing both basic and enhanced[63] 911 features. The inability of satellite carriers to provide even basic 911 service at the present time convinces us that emergency call centers would be an appropriate first step for satellite carriers. Globalstar informed staff that it receives an average of 12 satellite 911 calls per month.[64] We believe that low satellite 911 call volume funher justifies a call center requirement, rather than E911, at this time. We did not obtain similar data from MSV, and it appears that other carriers currently do not offer emergency services. However, we suspect that those MSS systems that offer emergency service likely process a small volume of ernerpency calls because they often have no more than hundreds of thousands of subscribers. For this reason. we believe that an interim measure is warranted while we develop a more thorough (and updated) record on E911. To that end. we propose that all GMPCS licensees providing real-time. two-way. switched voice service that is interconnected with the public switched network establish national call centers to which all subscriber emergency calls *are* routed. We seeh comment on the call center approach as a requirement to be effective one year afier adoption and until E911 rules are adopted lor all GMPCS systems.

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[54] Inmarsat *Satellite 911 Public Notice* comments at 4.

[55] Inmarsat *Satellite 911 Public Notice* comments at 4-5

[56] *Fcb 22 Ex Parte Memo* at 2.

[57] *Feh 27 Ex Purre Memo* at 7.

[58] *Feh. 22 Ex Parte Memo* at 2; *see also* Globalstar *Satellite 911 Public Notice* comments at 2

[59] *Feb 22 E.r Parte Memo* at 2.

[60] *Feb 22 Ex Parte Memo* at 2; *see also* Globalstar *Satellite 911 Public Notice* comments i t 20

[61] *Feb. 22 Ex Parte Memo* at 2.

[62] Globalstar *Satellite 911 Public Notice* comments at 2.

[63] The technical obstacles to provision of enhanced 911 arr discussed in more detail below in paras. 28-41

[64] In July 2001, Globalstar achieved a high of 22 satellite 911 calls *Feb 22 Ex Parte Memo* at 2.

23. We envision each carrier having one or more call centers to which 911 emergency calls would be routed.[65] Subscribers (located in the United Stares. including Pueno Rico and the U.S. Virgin Islands) would reach the call center by dialing "9-1-1" on their handsets. This would be consistent with the 911 Act. which mandates that the Commission designate *911* as "the universal emergency telephone number within the United States for reporting an emergency . . ."[66] Inmarsat points out that its terminals (approximately 250.000 are currently in use) are incapable of the three digit dialing needed to provide 911 service.[67] Even if Inmarsat's mobile terminals in a given country cannot make short code calls to emergency services in that country.[68] we do not see this as an impediment to using shon code dialing to access a carrier's own call center. The ability of mobile earth terminals to access call centers by means of three digit dialing has been demonstrated by Globalstar and MSV.

24. We find that Globalstar's and MSV's method of having live operators ask the caller for his or her location and callback number (in the event of a disconnection) is sound in the context of typical MSS senices already deployed and anticipate that other carriers will follow this model. While we do iiot believe a rule is warranted at this time to mandate call center answering protocols aiid procedures. we invite comment on the matter. We find merit in Globalstar's use of a national PSAP database that operators use to determine which PSAP is nearest to the caller. We seeh commenf on whether there ore any issues concerning the availability or accuracy of PSAP databases. for purposes of **MSS** call centers. that warrant Commission attention at this time. For instance. we seek comment whether guidelines would be useful in ensuring database accuracy. Globalstar's customers. if calling *91* 1 from locations in the Caribbean and Mexico, cannot access the ECAS call center; rather. the caller hears a recorded message saying that the network cannot process the call."[69] The reason given for this is that Globalstar does not have a PSAP database for these regions. and therefore would be incapable of connecting a subscriber to a PSAP."[70] The success of an emergency call center is dependent on complete **PSAP** information and therefore the Commission believes that carriers. for service within the United States, have on obligation to obtain or create a PSAP database that covers the United States, including Puerto Rico and the U.S. Virgin Islands."[71]

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[65] We agree with NSARC that the dialing of 911 from a satellite handset should be a two step process (*i.e.*, dialing the access number then pressing <send>) to minimize false calls that could result from one-touch dialing. NSARC *GMPCS NPRM* comments at 2. The USCG also expressed concern about minimizing hoax calls. USCG *GMPCS NPRM* comments at 6.

[66] 911 Act at Section:. *See also* 47 U.S.C. § 251(e)(3); Implementation of 911 Act: The Use of N11 Codes and Other Abbreviated Dialing Arrangements. CC Docker No. 92-105, WT Dochet No. 00-110, *Fourth Report and Order and Third Notice of Proposed Rulemaking, Notice of Proposed Rulemaking*, 15 FCC Rcd 17.079 (2000) (implementing rhis mandare).

[67] Inmarsat Ventures plc *ex parte* at 2. Inmarsat points out that its terminals use the country code 870. giving them the ability to roam globally without using any one country's national numbering scheme. As we understand it. a call to an Inmarsat terminal, even if located in the caller's country, is nevertheless an international call because the 870 access code must he dialed first. Calls made from an Inmarsat terminal must also be preceded by a recognized counrry code: thus a "user *cannot* dial simply a national number (including shon codes lor emergency calls, e.g., 911, 112, 999)." *Id.* at 2.

[68] Inmarsat Ventures plc *ex parte* at 2. Inmarsat does say that users of its terminals can access a local **PSAP** provided the phone number and country code are known. although we find that dialing these numbers (even if known) would be cumbersome in a bona tide emergency

[69] *Feh 22 Ex Porrr Memo* at 2

[70] *Feh 22 Ex Parte Memo* at 2

[71] *But see* discussion regarding completion of 911 calls when no PSAP has been designated by the state or local authorities. at para. 25 below. That situation is much different from when a carrier cannot complete a 911 call because of an incomplete PSAP database.

25. Several commenters have pointed out that MSS callers are likely to he located in remote areas where no PSAP may be available.[72] In these instances. a database of local PSAPs would not provide a basis for connecting the caller with emergency personnel. We addressed this issue in the context of our proceedin; to implement the 911 Act. where we stated that. in areas where no PSAP has been designated. carriers still have an obligation not to block 911 calls.[73] Specifically, by September 11. 2002 we required that. in areas where no PSAP has been designated. carriers must begin deliveiing 911 calls:

> (a) to a statewide established default point: (b) if none exists, to an appropriate local emergency authority. such as the police or count: sheritf. selected by an authorized State or Local entity: or. finally. (c) as a matter of last resort and to avoid the blocking of 911 calls. . . . to an appropriate local emergency authority. based an the exercise of the carrier's reasonable judgment. following initiation of contact with the State Governor's designated entity under section 3(b) of the 911 Act.[74]

In taking these measures. we intended to eliminate or reduce occurrences of wireless "carriers furnishing intercept messages alerting callers that the emergency call cannot be completed . or is otherwise blocked."[75] We believe rhat satellite carriers should comply with the same requirements. However, ice appreciate that a satellite carrier, having national coverage and the responsibility to determine appropriate emergency personnel for its entire nationwide footprint. may experience more difficulty than a locally-deployed wireless carrier in determining to which entity to send emergency calls in the absence of a PSAP. Thus we seek comment on whether GMPCS carriers should have an extended period within uhich to comply with this requirement. For example. if the call center requirement becomes effective one year after adoption, should a licensee be responsible. as of the effective date, for delivering 911 calls for all. or only a portion of, areas lacking PSAPs? What would be a reasonable time frame for requiring a satellite carrier to route all 911 calls from subscribers? The International Bureau has suggested that in some cases, "public safety needs may best be met by routing MSS emergency calls to someone other than a local PSAP, for instance to the Coast Guard."[76] NENA agrees that "calls frcm coastal waters" and certain other waterways might be better routed to the Coast Guard. but stresses that the call. while originating from water, should still use 911 as the dial code.[77] We are interested in learning if additional parties support this proposal. We note that vessels at sea already have access to the Global Maritime Distress and Safety System ("GMDSS") lor distress and safety needs." and therefore persons at sea may not have an expectation of911 service with satellite handset phones.

26. We recognize that MSS call centers are not PSAPs themselves, but rather serve as an intermediary that refers emergency calls to PSAPs. Our inquiries regarding rhe intermediary role of telematics call centers are thus applicable to MSS call centers as well.[79] As we observe in our discussion

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[72] *See* APCO *GMPCS NPRM* comments at 2; NSARC *GMPCS NPRM* comments at 2. LCA. in its *GMPCS NPRM* comments at 18. noted that "MSS will provide coverage in arras where 9-1-1 service may nor exist . . ." Consrellation noted that its MSS system "will cover the entire counrry. including large unpopulated areas where there may not be a designated agency to respond io emergency calls." Consrellation *GMPCS NPRM* comments at 13.

[73] *See Fifth Report and Order* at para 15

[74] *Fifth Report and Order* at para. 15

[75] *Fifth Report and Order* ar para. 23

[76] *Satellite E911 Public Notice* at 3-4.

[77] National Emergency Number Association (NENA) *Satellite 911 Public Notice* comments at 3

[78] *See* 47 C.F.R. § 80 Subpart W

[79] See. e g . paras. 66-69.

below of telematics. we are concerned about delays that might result when call centers forward calls to PSAPs.[80] Globalstar indicates that it establishes a conference call link between a 911 caller and a PSAP without the use of trunks to selective routers." We seeh comment regarding how othsr currently operating MSS call centers approach this issue, and uhether any problems have been encountered.

27. We also seek comment on whether a satellite system's inherent location determination capabilities should be used to obtain a 911 caller's location and whether that infnrmation should be automatically transmined to the call center. if technically feasible. As described above, callers using Globalstar can use their handsets to determine their approximate coordinates. then read this information to the emergenc) operator. who then uses it to ascenain the appropriate PSAP. The Iridium system, while iiot currently providing emergency call assistance, is capable of determining the location of a caller within an accuracy of approximately 10 to 20 kilometers.[82] Clearly. the availability of latitude and longitude information can enhance the ability of a call center to match the correct PSAP. particularly when callers are lost or otherwise do not know where the) are and cannot prov ide an address. We seek comment on the benefit to be gained in requiring satellite systems that are capable of determining caller locations to automatically transmit that information to the call center. either as the 911 number is dialed or shortly after the connection is made to the call center. itadditional time is necessary for the handset to see enough satellites to determine location. Tne National Search and Rescue Committee ("NSARC") acknowledges that MSS systems do not have the same location precision as terrestrial wireless ones. hut is nonetheless "confident that improvements are forthcoming," and believes that any ALI requirement for MSS systems should be hased on their inherent capabilities." We are interested in learning if other public safety organizations share NSARC's view. We recognize that the ability of satellite communications networks to determine a caller's precise location is constrained and cannot (with current equipment) reliably reach the level of accuracy that the Commission has set for handset and network-based solutions for terrestrial wireless.[84] However. the public interest may best be served by utilizing all resources available in aiding callers in an emergency. If we were to require carriers to relay automatically available location information to emergency call centers. we also seek comment on reasonably achievable accuracy standards we could establish for this location information.

(ii) Enhanced 911

28. In this section. we seek to develop further the record on implementation ofenhanced 911 for satellite carriers. The record generated thus far in the GMPCS and 2 GHz MSS proceedings illustrates a fundamental difference of opinion as to whether requiring E911 tor MSS is appropriate at this time. Satellite licensees generally oppose adoption of a rule requiring E911 for MSS, claiming it is premature and/or not economicall and technically feasible. while public safety entities support E911, claiming it is in the public's interest.[85] NTIA argues that E911 is especially important for MSS terminals for callers

[80] *See* para. 69 *infra*

[81] *Feb 22 Ex Parte Memo* at 2

[82] *Feb 22 Ex Parte Memo* at 3. As a big LEO licensee. Iridium is required to be capable of locating the position of users of mobile transceivers in an effon to prevent interference with the radio astronomy service. *See* 47 C.F.K. § 25.213.

[83] NSARC *GMPCS NPRM* comments at 3

[84] For network-based technologies, we require Phase II location accuracy to be within 100 meters for 67 percent of calls and 300 meters for 95 percent of calls Fur handset-based technologies, we require Phase II locarion accuracy to be within 50 meters for 67 percent of calls and 150 meters for 95 percent of calls. *See* 47 C.F.R. § 20.18(h)

[85] For satellite licenser and manufacturer comment, *see, e.g.*, Inmarsat Ltd *GMPCS NPRM* comments at 9-10, SIA *GMPCS NPRM* comments at 1, Motorola *GMPCS NPRM* reply at 13, Iridium LLC *GMPCS NPRM* reply at 13, ICO Global *GMPCS NPRM* comments ai 3, TMI *GMPCS NPRM* reply at 7-8, Constellation *GMPCS NPRM* comments at 15, AMSC *GMPCS NPRM* comments at 16-17, LGA *GMPCS NPRM* reply at 19. Comsat GMPCS *NPRM*

(continued...)

located in areas not sewed by terrestrial wireless networks or callers who cannot otherwise identify their location."[86] Licensees. such as Inmarsat. respond that E911 features are too expensive and technically difficult to implement. and that the existence of a satellite handset (and the ability to use it anywhere) is a public benefit in and of itself."[87] While the Inmarsat position may be valid to a cenain extent. we believe that. if the technology and cost permit. consumer expectations and **the** public interest support a requirement that MSS provide E911 services comparable to those of terrestrial wireless. However. the record thus far demonstrates that E911 requirements for satellite systems may be premature at this time. particularly with regard to the gateway architecture of satellite network In this section we intend to develop funher the record for MSS enhanced 911 rules since we anticipate their eventual adoption. We also seek intormation regarding whether network technology has improved in any significant way since comments were last filed on these issues. We also seek information relevant to comparing the MSS and terrestrial wireless contexts. including with respect to the two phases in which we required terrestrial wireless carriers to implement enhanced 911–the first phase consisting of Automatic Number Inlormation ("ANI") and second phase consisting ot Automatic Location Identification ("ALI"). These inquiries arc also relevant to our request for comment in paragraph Si below concerning basic and enhanced 911 coinplinnce in the event satellite carriers are permitted to offer an ancillary terrestrial component tu their satellite service.

(a) **Nehrork** Design and **LEC Interconnection**

29. Backeround. The *Satellite E911 Public Notice* sought comment, generally. on whether there would be any need for special regulatory policies with regard to MSS licensee coordination with local exchange carriers **(LECs)** and **PSAPs.**[88] In the terrestrial wireless context. the Commission left the resolution oftechnical and operational decisions necessary for implementing E911 to the interested parties, including wireless and wireline carriers. PSAPs. state and local governments. manufacturers, and standard-setting groups."[89] This approach stemmed from a Commission belief that it should determine only the capabilities that must be achieved. rather than promulgate extensive technical standards."[90] We

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comments at 13. Motienr *Satellite 911 Public Notice* comments at 1. IC 0 *Satellite 911 Public Notice* comments at 2, Globalstar *Satellite 911 Pirblic Notice* comments generally The *2 GHz NPRM* record contains similar comments on this subject. *see, e g.*, Boeing 2 *GHz NPRM* comments at 19. IC 0 USA Service Group 2 *GHz NPRM* comments ai 43, Constellation *2 GHz NPRM* comments at 26. TMI *2 GHz NPRM* comments at 10. Globalstar. L.P. 2 *GHz NPRM* cornmenis ai 30, IC 0 *2 GHz NPRM* comments at 19. SIA *2 GHz NPRM* comments at 2. However. satellite licensee Celsat supported E911 for 2 GHz MSS (*see* Celsat *2 GHz NPRM* comments at 30). and suggested in its reply thar the development of E911 rules should **be** deferred io a separate proceeding (Celsat *2 GHz NPRM* reply at 27-28). Celsat did noi file comments in response to the *Satellite 911 Public Notice*. For public safety comment and other entities supporting satellite E911, *see, e.g.*, NTIA *GMPCS NPRM* reply at 8. APCO *GMPCS NPRM* comments throughout, NSARC *GMPCS NPRM* cornmenis at 2. USCG *GMPCS NPRM* comments throughout, NENA *GMPCS NPRM* comments at 2, APCO *Satellite 911 Public Notice* comments at 2. NENA *Satellite 911 Public Notice* comments at 1, SCC *Satellite 911* Public *Notice* comments at 2, Washington State *Satellite 911 Public Notice* comments at 2, APCO *2 GHz NPRM* cornmenis at 2. Bellsouth *2 GHz NPRM* comments at 6. NTIA *2 GHz NPRM* cornmenis ai 16. and USCG 2 *GHz NPRM* comments at 4-5

[86] NTIA *GMPCS NPRM* reply at 8.

[87] Inmarsat *GMPCS NPRM* reply at 9: *see also* ORBCOMM *GMPCS NPRM* comments at 15: Globalstar *Satellite 911 Public Notice* comments at 9; Inmarsat Ventures plc *ex parte* at 2.

[88] *Satellite 911* Public *Notice* ar 6

[89] *See Wireless E911 First Report and Order*. 11 FCC Rcd at 18712-14; Revision ofthe Commission', Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems. CC Docket No. 94-102, *Second Memorandum Opinion and Order*, 14 FCC Rcd 20850 ai para 93 (1999) ("*Wireless E911 Second Recon Order*")

[90] The issues the Commission left to interested parties io resolve Included "standards necessary io implement and enable widespread wireless access to emergency communications and services. ihe specification of a required grade

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continue to believe that this approach is preferred. although the Wireless Telecommunications Bureau recently initiated an inquiry into ongoing E911 implementation issues concerning LEC and **PSAP** readiness." **As** we observed above in our call center discussion. satellite network architecture. by design. has few public switched network interconnection points. making the automatic routing of even basic 911 calls to **PSAPs** difficult.

30. The record shows that high costs are associated with modifying satellite network infrastructures *to* accommodate enhanced emergency call information and route it **to** appropriate **PSAPs.** Some carriers argue that network modifications are necessary to forward ANI and ALI data. such as retrofitting switches throughout the network and making costly private trunking arrangements between earth stations and **PSAPs."** ICO suggests that the retrofit costs could be reduced if (i) a single: central emergency call service could receire calls for the *nation* or *(ii) each* of the 50 states has a single point of emergency contact.[93] In addition, without a nationally-coordinated **PSAP** program, "MSS operators must work with the **PSAPs** on **a** state-by-state. locality-by-locality basis. which would create enormous administrative costs. . . ."[94]

31. Discussion. We seek comment whether E911 requirements for satellite carriers should be delayed until these network issues are resolved. We seeh comment on alternative methods of facilitating **LEC** interconnection and **PSAP** routing. For example. call centers might be capable of receiving **ANI** and **ALI** information. which operators could forward. along with the emergency call. to the appropriate **PSAP.** While ICO's proposal for the establishment of national **PSAP** referral center or central **PSAP** office for each of the 50 states may resolve coordination issues. we believe that states and localities are best equipped to design **PSAP** infrastructure. In the terrestrial wireless E911 proceeding, the Commission recognized that because selective routing of wireless 911 calls **to** the appropriate **PSAP** is complicated by the fact that the caller is often moving. carriers would need to coordinate with state and local governments to determine the **PSAPs** that are appropriate to receive wireless 911 calls.[95] The Commission indicated that until a state or local governmental entity develops a routing plan for wireless 911 calls within its jurisdiction, covered carriers could comply with the E911 rules by continuing to route 911 calls to the

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of service [in terms of call blocking probability], the mapping required to develop the coordinates of latitude and longitude necessary for location identification. and the exact inrerface between the several components of the total network" *(i.e.*, signaling and switching capabilities) *E911 First Report and Order* at para. 73. We note that the Commission had a fair degree of confidence that the relevant parties would resolve thene matters. since many were pan of. or represented on. a Consensus Agreement on E911 issues between several public safety and wireless industry entities. The Cornmission required the signatories to the Consensus Agreemenl. PCIA. and the Consumers First and the Ad Hoc Alliance for Public Access to 911 to submit status repons to the Commission at regular intervals, ***See*** *E911 First Report and Order* at pard 75.

[91] ***See*** Wireless Telecommunications Bureau Seeks Comment on Repon on Technical and Operational Wireless E911 Issues, WT Docket No. 02-16. *Public Notice*, DA 02-2666 (rel Oct. 16, 2002).

[92] ICO *Satellite 911 Public Notice* reply at 3-4. ICO maintains that if E911 is adopted. the costs to modify its handsets and network would be "enormous.'. ICO *Satellite 911 Public Notice* comments at 7. *See also* discussion of Globalstar's need for an American National Standards Institute ISDN User Panconnection to the PSTN in para. 33 *infra.* Globalstar says "automatic routing of basic 911 calls would be *cost* prohibitive unless PSAPs themselves are financially responsible for the disrance-sensitive trunk connections between. . . gateways and the many LEC selective routers nationwide" and also notes that due to its few number of gateways. **PSAPs** would need to interconnect not only with LECs. but with interstate and international carriers as well to receire 911 calls. Globalstar *Satellite 911 Public Notice* comments at 23

[93] ICO *Satellite 911 Public Notice* comments at *b.*

[94] ICO *Satellite 911 Public Notice* comments at 7

[95] *Wireless E911 First Recon Order* at paras. **98-99**

PSAPs designated by local authorities to answer wireless 911 calls.[96] We encourage satellite carriers to confer with state governments regarding their designated wireless PSAPs.[97]

32. We seek further comment on costs to transport enhanced call information. ICO and Globalstar note that **PSAPs** would need to make modifications to their equipment in order to receive E911 call data from a satellite network. and both express uncertainty whether the PSAPs have begun making these modifications.[98] We seek comment on this **issue.** particularly whether a **PSAP** that is confipured to receive terrestrial wireless **E911** data can also receive **E911** data from a satellite licensee. or whether **PSAPs** would have to make additional modifications. We seeh additional comment on the need (as Globalstar and ICO assert) for costly trunk arrangements for transporting enhanced **911** calls from satellite gateway stations to **PSAPs. As** noted abore. Globalstar's emergency service does not use such trunks when forwarding calls from the call center to PSAPs.[99]

(b) Provision of Automatic **Number** Identification

33. Background. In the *Satellite E911 Public Notice*, the International Bureau asked whether the Commission should implement ANI for satellite 911 calls. and iis o what would be an appropriate implementation schedule.[100] The International Bureau also ashed whether provision of **ANI** would be more problematic for MSS providers than ior covered wireless providers."[101] Public safety entities such as the Coast Guard and **NENA** suppon ANI for satellite carriers. [102] bur the limited record on this issue reflects that the infrastructure of some currently operational carriers. including **AMSC** and Iridium. is not capable o f receiving and transmitting **ANI** information.[103] Globalstar maintains tliat its gateway stations are incapable of accepting **ANI** information. and moreover Globalstar is unsure whether **PSAP** and LEC

[96] ***Wireless E911 First*** *Recon* ***Order*** at para. 99 **See** ***also*** **47 C.F.R.** § 20.3 (defining a **PSAP** as a "[p]oint that has been designated to receive 911 calls and route them to emergency service personnel).

[97] *See, e.g.*, ***Fifth Report and Order.*** **16 FCC** Rcd 22264 **at** para. 27 (addressing the need for carriers to contact the entity to be designated by the State's Governor pursuanr to section 3(b) of the 911 Act).

[98] *ICO Satellite 911 Public Notice* comments at 6-7; Globalstar *Satellite 911 Public Notice* comments at 17.

[99] *Feh 22 Ex Parte Memo* at 2. **NENA** observes that Globalstar's ability to route 911 calls from its cull center to **PSAPs** refutes Inmarsat's argument thar MSS systems cannot use existing facilities to route calls **to PSAPs. NENA** *Satellite 911* Public *Notice* reply at 3.

[100] *Satellite 911* Public ***Notice*** at **5.**

[101] We require terrestrial wireless licensees to provide **ANI** to **PSAPs** as Phase I of enhanced 911 service. ANI consists of the caller's telephone number and the location ofthe cell sire or base station that received **the** 911 call. ***See*** **47 C.F.R.** § 20.18(d). In the satellite context, we understand rhar lack of terrestrial base stations (other than the small number of gateway stations) limits **ANI** to the caller's telephone number. **Also.** we recognize that requiring satellite carriers to implement **ANI** prior to **ALI** (as Section 20.18 requires for covered terrestrial carriers) may he impractical. because a sarellite 911 call cannot be automatically roured to a **PSAP** with out first determining a caller's precise location. ***See infra*** para. ***83.***

[102] **NENA** ***Satellite*** *911 Public Notice* reply at 2-3; USCG *Satellite 911 Public Notice* comments at 6. The Coast Guard also argues that having the callback number will assist in tracking down hoax callers. Due to the costs involved in investigating calls that are revealed to be hoaxes (as the Coast Guard has demonstrated), we are persuaded rhat identification and prosecution of hoax callers provides additional basis for an **ANI** requirement.

[103] In response to the more general inquiries of the *GMPCS NPRM*, Motorola observes that "[d]ue to differences in telephone and radio system dialing prorocols. it is nor yet feasible to provide **ANI** on the Iridium system." Motorola *GMPCS NPRM* comments at n.33. AMSC similarly notes that its network could not (as of 1999) provide **ANI** or ALI, and that reconfiguring the network would cost approximately hundreds of millions of dollars. **AMSC** *GMPCS NPRM* comments at 16-17.

trunking facilities (including those in Canada) can transport the ANI.[104] Globalstar estimates that the cost of the necessary equipment to provide ANI (i.e., an American National Standards Institute ISDN User Part connection to the PSTN) would be $1,000,000, exclusive of trunking costs.[105] Globalstar argues that the cost of establishing **trunks** between its gateways and each PSAP would be prohibitive, and that "given the low number of 911 calls over [Globalstar's satellite network], the costs of imposing a 'Phase I' [i.e., Phase I as defined in the terrestrial wireless rules] ANI obligation are not justified."[106]

34. Discussion. We agree with commenters such as NENA and the Coast Guard that the availability of the caller's number will serve the public interest by enabling PSAPs to reconnect to callers in the event of a disconnection and to track down hoax callers. Accordingly, we seek further comment regarding the feasibility of transmitting a caller's phone number to the PSAP. For example, we seek comment whether satellite network technology has improved in the time since comments were last filed, thus enabling the generation of **ANI** data. Are Globalstar's concerns regarding LEC and PSAP readiness well-founded, especially as these entities work to accommodate ALI and **ANI** from terrestrial wireless carriers'. Do other currently operational MSS licensees face hurdles similar to Globalstar's with regard to network retrofits? What costs do other carriers anticipate incurring to reprogram current equipment or acquire new equipment? Could accommodation of ANI be facilitated if imposed on future generations of systems currently operating? We welcome comment from all interested parties on these matters.

(c) Provision of Automatic Location Information

35. Background. In the *Satellite E911 Public Notice*, the Bureau sought input on a variety of issues pertaining to satellite system provision of ALI. In particular, the Bureau asked if implementation of handset-based ALI for **MSS** licensees would be any more problematic than it has been for terrestrial wireless carriers.[107] The Bureau also asked if technologies already developed for terrestrial purposes would be readily adaptable to MSS, or at least be available at prices comparable to those charged to terrestrial carriers.[108] The Bureau solicited comment on the costs associated with implementing handset-based ALI, both with regard to handsets and any other related expenses. As an alternative, the Bureau asked whether **ALI** can be achieved without the need for GPS receivers in handsets, and if so what level of accuracy could be attained, and at what cost.[109]

36. We received a range of comments on the feasibility of providing accurate location information for MSS subscribers. Several licensees indicated **that** their constellations are incapable *of* ascertaining a caller's position, rendering only GPS as an ALI solution.[110] Some carriers can and do

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[104] Globalstar *Satellite 911 Public Notice* commenrs at *I7*

[105] Globalstar *Satellite 911 Public Notice* comments at 17-18

[106] Globalstar *Satellite 911 Public **Norice*** coniments at 18

[107] *Satellite 911 Public Norice* at 5. The terresrrial wireless Phase II accuracy srandardc fur handset-based technologies are 50 meters for *61* percent of calls and 150 meters for 95 percent **of** calls and for network-based technologies are 100 meters for *61* percent of calls and 300 meters for **95** percent of call;. *See* 41 C.F.R. § 20.18(h)

[108] *Satellite 911 Public Notice* at 5-6.

[109] *Satellite 911 Publrc Norice* at 6

[110] *See, e.g.*, Inmarsat *Satellite 911 Public Notice* comments at 3 (Inmarsat's use of a four GSO satellite network "makes it impossible" to provide **ALI** without including GPS components in the handset); ICO *Satellite 911 Public Notice* comments at 3-4 (ICO's MSS network uses 12 satellites with large spot beams to cover the entire United States, with all calls routed to a single gateway station. ICO asserts that this architecture makes provision of **ALI** too difficult, leaving GPS as the only viablr option.); Motient *Satellite 911 Public Notice* comments at 3 (Motient says that its network consists of five beams, each covering thousands of square miles, but adds that **these** beams cannot determine a caller's position with the accuracy required by Secrion 20.18).

ascertain a caller's position hut the degree of accuracy is not commensurate with our terrestrial wireless standards. and they too submit that only GPS would meet the terrestrial wireless Phase II standards."[111] The Coast Guard urges the Commission to require an ALI standard for GMPCS that is "at least as accurate as the 125-meter R M S [root mean square] standard" contained in the then-current terrestrial wireless rule (the 125- meter RMS standard was later replaced with differing standards for handset-based and network-based solutions)."[112] The Coast Guard says that terrestrial wireless Phase II-type location accuracy is "mandatory" because otherwise rescue delays will inevitably occur, and knowledge of the caller's location will assist in the identification and prosecution of hoax callers.[113]

37. Public safety advocates generally believe that GPS components can be integrated into MSS handsets. but carriers are less optimistic. SCC Corp. recognizes the technical limitations laced by satellite carriers. and argues that GPS technology "offers an independent and proven means of meeting Phase II location standards. . . ."[114] Inmarsat and ICO argue that the use of GPS chipsets adds too much expense to tlir cost of handsets: ICO in particular notes that the per unit cost for incorporating CPS into one of its handsets is $30.[115] With regard to other GPS technical considerations. ICO comments that GPS hardware would reduce a handset's battery life from 180-200 hours to about 20 hours.[116] NTI4 points *out* that "filters with an extremely steep roll-oft would be required" for GPS and MSS components to work simultaneously. due to band proximity.[117] Globalstar maintains that its network and GPS transmit/receive functions cannot operate simultaneously because of interference issues.[118] NTIA observes that simultaneous operation problems could he minimized through time-sharing. "e.g., [the] GPS receiver is turned off while [the] MSS handset is transmitting."[119]

38. Discussion. While we recognize the value in establishing strict accuracy standards. as the Coast Guard advocates. we are persuaded based on the existing record that presently the only way of achieving such standards is via GPS. In the terrestrial wireless proceeding. we stressed the importance of maintaining technical neutrality in the selection of ALI technology[120] and we intend to continue that policy with satellite systems. Thus we seeh comment on whether we should allow ALI to be provided by

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[111] *See* Globalstar *Satellite 911 Public Notice* comments at 12 (10 kilometer accuracy 90% of rime): *Feb. 22 Ex Parte Memo* at 3 (Iridium Satellite can determine the location of a caller with an accuracy of 10 to 20 kilometers). Orbcomm, a Little LEO licensee. estimates thar its system can ascertain the location of a stationary user terminal within 10 minutes wiih 500-meter accuracy 95% of the rime. using calculations based on Doppler variations in the signals received from its low-orbit satellites. Additional time will allow more satellite passes and thus refined accuracy (approximately 350 meters within 30 minutes). ORBCOMM *GMPCS NPRM* comments at 12-13.

[112] USCG *GMPCS NPRM* comments ar 6-8

[113] *Id*

[114] SCC *Satellite 911 Public Nottce* comments at 3-4

[115] Inmarsat *Satellite 911 Public Notice* cornmenis at 3-4; ICO *Satellite 911 Public Notice* comments at 4-5.

[116] ICO *Satellite 911 Public Notice* comments at 4

[117] NTIA *Satellite Y11 Public Notice* reply at 10

[118] Globalstar *Satellite 911 Puhlic Notice* comments 19 Globalstar also points out rhat handset-based ALI solutions have network infrasrructure consequences. *including the* need for "a switch-based networx component that may not be readily interposed **on** an MSS gateway facility" and gateway upgrades to provide network assistance to the handset. requiring additional servers (a "significant undertaking"). *Id* at 19-20.

[119] **NTIA** *Satellite Y11 Public Notice* reply at 10

[120] *Wireless EYII First Report and* ***Order.*** 11 FCC Rcd at 18714 (emphasizing the intention to adopr general criteria rather than technical standards); *Wireless E911 First Recon Order*. 12 FCC Rcd 22665, 22724-5 (inserting deadlines and benchmarks for **ALI.** Commission policy has been to be technologically and competitively neutral); *Wireless E911 Third Report and Order*. 14 FCC Rcd 17388 at para. 14.

a carrier's inherent capabilities. or whether we should require all satellite carriers to implement a handset-based solution that incorporates GPS. If we were to allow licensees to choose their technology, would the public interest be served by allowing a relaxed accuracy standard for network-based solutions (*e.g.*, a theoretically best accuracy of 1 kilometer. 90 percent of the time[121])? We seek comment on acceptable alternative location accuracy standards. Particularly, we are interested in whether carriers that can pinpoint caller location to within 10 to 20 kilometers (such as Iridium and Globalstar) should be required to convey those coordinates to a PSAP when connecting 911 calls. We seek comment on the public benefit of using existing/inherent satellite location technology to determine the appropriate **PSAP** to call and whether to transmit tlie caller's coordinates to the PSAP. We also **seeh** comment on whether other technology is available or will be available in the near future tliat MSS carriers can use to provide similar or better ALI data as compared to GPS. If relaxed standards are unacceptable. should we delay implementation of a GPS solution until costs and engineering issues have been resolved substantially. or would a relaxed standard suffice until such time as issues with a GPS solution are resolved?

39. We understand troni the Coast Guard that inaccurate coordinates may be of limited value when conducting maritime searches. but we seek comment from other entities whether available location technology. in concert with information gleaned from callers themselves, still serves the public interest. If not. we seek comment on whether implementation ot wireless-comparable ALI standards should be drlayed for **MSS** until economies of scale exist **that** bring costs down to levels proportional to those that wireless carriers have achieved (recognizing that such a delay might add several years to satellite E911 becoming effective).

40. We also **seek** comment on certain interference issues. Globalstar maintains that **its** transceiver units. if equipped with GPS functions. cannot transmit and receive at the same time due lo interference issues.?[22] We recognize this limitation as a valid concern and thus seek funher comments on ways to mitigate this interference, and also whether this is an issue other **MSS** operators will encounter. In addition, we seek comment on non-simultaneous use of the transceiver unit for transmitting and receiving a GPS signal.[123] Further. we **seek** comment on the impact the non-simultaneous functions would have on GPS acquisition time (*i.e.*, the time interval to synchronize the mobile transceiver with the GPS constellation) and position determination of the transceiver. We also seek comment on call set-up time for such non-simultaneous uses. Globalstar notes that a GPS receiver in a handset "could take several minutes to successfully access the GPS satellites to determine its position," which contrasts **with** the "few seconds" needed to establish a Globalstar call.'[124] At tlie time Globalstar prepared its comments. we believe Globalstar was correct in its assessment; however, based on current GPS technology we believe this is no longer the case. We invite comment on the use of adequate filtering. as suggested by **NTIA.** as a **way** of minimizing interference."[125] We believe that proper filtering will address interference concerns. bur we are interested in comment *on the estimated* costs of such a solution.

41. We acknowledge the fact (as ICO aiid Inmarsat point out) that incorporating GPS technology into handsets may alter the weight. size and power consumption of the mobile transceiver unit and also

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[121] *See* Globalstar *Satellite 911 Public Notice* comments at 20

[122] Globalstar *Satellite 911 Public Notice* comments at 19

[123] NTIA in its cornmenis proposes non-simultaneous use ofthe transceiver unit as a means for avoiding interference io the receive GPS signal on an MSS transceiver equipped with GPS receive capability. NTIA *Satellite 911 Public Notice* reply at 10

[124] Globalstar *Satellite 911 Public Notice* comments at 19

[125] NTIA *Satellite 911 Public Notice* reply at 10 (suggesting that in order lor MSS handsets to transmit simultaneously during GPS operation. "filters with an extremely steep roll-off would be required," with impractical cost. ueight, and power concerns).

increase the cost per unit. However, based on our understanding of the current trends in technolog). in particular **ALI** using **GPS** technology. we believe that the record before us is somewhat stale and that costs and battery size have come down somew hat. Therefore. we seek updated information on the costs associated with weight, size and power consumption of these terminals when equipping mobile satellite transceiver units with **GPS** technology. We also **seek** comment on the cost associated with upgrading current satellite networks to accommodate that transmission of **GPS** data. and the costs associated with incorporating **GPS** into the designs of future MSS networks. in particular information pertaining to routing and processing of E911 calls. We seek input regardiny whether advances made thus far in tlir provision of E91 I for terrestrial wireless are in any way applicable to satellite networks.

(d) Implementation Schedules

42. Discussion. We believe the record would benefit from additional information concerning implementation schedules for satellite E91 I. **A** variety of factors distinguish satellite E91 I implementation from its terrestrial counterpart. First. due to netw ork architecture. an MSS gateway requires the specific location of the caller first in order to connect **the** call to a **PSAP.** Knowledge of the caller's specific location constitutes **ALI.** and without this information a satellite call cannot be routed to a **PSAP.** Therefore, unlike terrestrial w ireless, where implementation o t **ANI** preceoed implementation of **ALI.** we do not believe that **ANI** can be implemented prior to **ALI** for MSS. We seek comment on whether. instead ofphasing in **ANI** and **ALI** separately. we should require satellite carriers to provide **ANI** and ALI simultaneously. **If we** should proceed with a unified ANI/ALI requirement. how soon after adoption ofthis requirement should currently operational and design-stage carriers become compliant? Can design-stage MSS systems be re-engineered and compliant with E91 I requirements upon inception of service? For example. we invite comment concerning the ability of **a** licensee that has already **met** its first milestone (*e.g.*, by entering a non-contingent contract for the manufacture of the first satellite in the system) at the time any **E91 I** requirements become effective to comply with those requirements. With respect to currently operational systems, we **seek** comment whether **ANI/ALI** services should be required for second or third generation satellite systems. Conversely. if provision of ANI/ALI services demands modifications in handsets and gateway stations. rather than satellites. we seek comment on whether E91 I is feasible with the current satellite generation. **We** seek comment on the predicted costs of implementing **ANI/ALI** and solicit input on possible subscribership levels that we could **set** as triggers for compliance with any such rule.[126] While SCC Corp. asks that the Commission establish firm deployment schedules,[127] we are not prepared to do so without additional inlormation.

43. Several satellite carriers have pointed out that they have relatively feu customers in comparison to terrestrial wireless companies. and as a result are unable to distribute the costs of enhanced 91 I services as easily to subscribers.[128] If MSS systems can only recover the costs of enhanced 911 services through additional charges to their existing subscribers. they likely will be forced to increase their subscriber rates by a substantial amount. Such increased rates may decrease the demand for their services. which means that fewer potential subscribers will purchase MSS services, whether or not it offers E91 I features. Therefore. we request comment on whether an E91 I requirement should be triggered only when a licensee has achieved a certain benchmark in subscribership.

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[126] *See also supra* para. 24

[127] *See* SCC *Satellite 911 Public Notice ex parte* letter (April 10. 2001)

[128] For example. ICO noted that (as of 1999). MSS subscribership numbered approximately 500.000, whereas wireless subscribership was 44 million when the Commission adopted E91 I rules in 1996 (and by 1999 subscribership reached approximately 86 million). ICO *Satellite YII Piihlic Notice* reply at 6. The Commission has said that "CMRS carriers are not subject to rate regulation, and may adjust iheir rates to reflect rhe cost of providing E91 I services without [Commission] intervention." *Wireless E911 Second Recon Order*, 14 FCC Rcd 20850 at para. 49 (1999)

44. *Grandfathering*. The terrestrial wireless rules provide equipment phase-in schedules for handset-based location technologies.[129] Inmarsat argues that in the event that the Commission adopts a location monitoring requirement for MSS. "these requirements [should] be applicable on a prospective basis only and that existing terminals he grandfathered against such requirements."." Inmarsat maintains that even though it intends to incorporate GPS into its next generation of MSS earih stations. it currently serves approximately 200,000 user terminals worldwide.[131] Do MSS licensees other than Inmarsat have a significant number of mobile earth terminals that would bc costly to retrofit? We are concerned about this issue as well and seek comment whether pre-existing mobile terminals in use at the time any E91 I rules are adopted and effective should be grandfathered from compliance. In order to determine the impact of a grandfathering provision, we also seek comment concerning whether satellite licensees expect significant terminal churn with regard to current customers.[132]

(e) Carriers **and** Services Required **to** Offer **E911**

45. Background. In the *Satellite 911 Public Notice*. the Bureau asked i.'91 I rules lor satellite services should be limited *to the same extent the rules* are limited for terrestrial wireless carriers *(i e.*. to carriers that provide real-time. two-way switched voice service that is interconnected :o the PSTN). The International Bureau also asked whether any MSS services are analogous to the maritime and aeronautical services that are exempt from the terrestrial wireless 91 I rules.[133] The Commission excluded maritime and aeronautical services from the terrestrial wireless 91 I rules. despite their being two-way voice services. because passengers and crews o f ships at sea rely on Global Maritime Distress and Safety System ("GMDSS") for emergency and distress. while passengers and crews of airplanes use other radiocommunication channels for emergency assistance.[134]

46. The record reflects a range o f positions concerning carriers that should be subject to 91 I requirements. ORBCOMM, a little LEO licensee, and NTIA argue that E911 requirements should not he imposed on non-voice MSS systems.[135] NTIA believes that the 91 I Act requires only "telephony" services. *i.e.*, "the transmission of voice over a communications network." to provide 9 I I. thereby excluding non-voice MSS.[136] NENA suggests that the 91 I Act requires maritime MSS to provide 91 I access. while the Washington State E91 I Program office asserts that a Washington 91 I statute makes no "operational distinctions when mandating enhanced 91 I. statew ide" and therefore any telephone system (including GMPCS) "must be designed to interface to existing E91 I systems if it is to meet the intent of [sic] Washington statute."[137] Boeing argues that nothing in the 91 I **Act's** legislative history indicates that

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[129] 47 C.F.R.§ 20.18(g).

[130] Inmarsat *Satellite 911 Publrc Notice* comments at **3**

[131] Inmarsat *Satellite 911 Public Notice* cornmenis at 3

[132] We note that replacement phones accounted for 23 percent of the terrestrial wireless handset market in 2001. **See** "Is Nokia Missing an Important Call? While the No. I Wireless Handset Maker Dawd'es. its Rivals are Rolling Out Advanced Models in the U.S.," Roger O. Crocket. *Business Week Online* (March 27. 2002).

[133] *Satellite 911 Public Notice* at 4 (citing *E911 First Report and Order* at para. 82)

[134] *E911 First Report and* ***Order*** at para. 82. *see also* 47 C.F.R. § 80, Subpart W

[135] ORBCOMM *GMPCS NPRM* commenrs at 12; FA/ORBCOMM *Satellite 911 Public Notice* comments at 2; NTIA *Satellite 911 Public Notice* reply at 11-12 *See also* NENA *Satellite 911 Public Notice* reply at 4 (concurring wiih ORBCOMM's position).

[136] NTIA *Satellite 911 Public Notice* reply ai 11-12

[137] NENA *Satellite 911 Public Notice* comnients ai 3 and reply at 4; Washingon State *Satellite 911 Public Notice* comments at 1. NENA maintains that although 'Congress ordained the use of these digits [*i e.*. 911] for all wireless

(continued. ..)

the Congress intended the statute to apply to MSS or aeronautical services.[138]

47. Discussion. We tentatively conclude that only CMPCS carriers providing real-time. two-way switched voice service that is inrerconnected to the PSTN should be required to provide E91 I services. This is consistent with our approach to terrestrial wireless services. We also tentatively conclude that maritime and aeronautical MSS services should be excluded from any 911 requirements. for the same reasons they are excluded from the terrestrial wireless requirements. While the Commission has found no public safety need for E91 I on terrestrial two-way, non-voice services,[139] the Coast Guard argues that any E911 requirements "should apply to all two-way voice and data systems which fall under the classification of GMPCS."[140] Although we are not inclined to extend any satellite 91 I requirements to non-voice systems. we welcome additional comment on the Coast Guard's proposal. ORBCOMM indicated in 1999 that it "recognizes that some subscribers will want to use their communicators to send 91 I-type messages. and ORBCOMM intends to address the needs ofthese potencial users by providing the appropriate" PSAP with information necessary to respond."[141] IIORBCOMM and/or any other non-voice systems currently provide this sort of emergency service. we seek commenr regarding its implementation and use.

48. We agree with Globalstar that we must reject Washington State's implication that all GMPCS providers must provide 91 I service to comply with a Washington statute."[142] The Commission observed in the wireless E911 proceeding "that state actions that are incompatible with the policies and rules adopted in this Order are subject to preemption."[143] Moreover. the Commission stated that federal preemption of state E91 I regulation "may be necessary to ensure the achievement o f various inssverable. nationwide aspects of E91 I operations," including nationwide E91 I operational compatib'lity.[144] These principles are as applicable to sarellite CMRS as they are to terrestrial CMRS. The only 91 I requirements satellite carriers must follow are those that the Commission adopts. to the extent it adopts any.

(iii) International Issues

49. Background. Rules requiring satellite carriers to provide emergency call centers and E91 I services raise international **issues,** including the **use** of different emergency access codes across the globe[145] and differing standards for the transmission and routing of enhanced call inlormation. Iridium

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(...continued from previous page)
telephone calls originating in the U.S.," the 911 Act "tolerates exemption" for aeronautical MSS NENA *Satellite 911 Public Notice* reply at 2-4.

[138] Boeing *Satellite 911 Pirblic Notice* reply at 1-2

[139] *E!?/ I Firsr Report and Order* at para. 82

[140] USCG *GMPCS NPRM* comments at 8. The Coast Guard also proposes that store-and-forward systems use the International Maritime Organization's "Criteria for Use when Providing Inmarsat Shore-based Facilities" to address the reliability of delivering emergency messages. *See* USCG *GMPCS NPRM* comments at 8-9

[141] ORBCOMM *GMPCS NPRM* comments at 16.

[142] Globalstar *Satellite 911 Public Norice* reply at 7 (noting that Washingon Stare "seems to imply that its slate law somehow supersedes the Commission's rules").

[143] *See E911 First Report and Order* ar paras. 104-105

[144] **See** *E911 First Report and Order* at para. 104

[145] By way of example. the emergency dial code for many European countries is 112; Argentina uses 101 for ambulance and police and 107 for fire: Brazil uses 192 for ambulance, 190 for police. and 193 for fire: China uses 120 for ambulance. 110 for police. and 119 for fire. Japan uses 119 for ambulance and fire and 110 for police. *See* http://www.globaltelecom.org/telecom.htm (visited 5/14/02).

LLC points to the existence ofcompeting access codes as evidence of the need fur an international forum to establish standards to adopting any E911 rules for satellite.[146] A variety of commenters urge that all international issues be resolved on the international stage. such as through the International Telecommunication Union-Radiocommunication Bureau ("ITU-R").[147]

50. Discussion. When the Cornmission initially declined to require MSS licensees to comply with any 911 rules. it identified the need to coordinate with international standards bodies for completion of international calls as one oithe several factors distinguishing MSS from covered CMRS carriers.[148] In the *Satellite 911 Public Notice*. the International Bureau asked if the public safety community and MSS industry participants had done anything "to continue their efforts to develop and establish standards [tor emergency calling] along with the international standards bodies."[149] The comments received in response to this inquiry did not differ substantially from the comnients received nearly a year and halfearlicr in response to the *GMPCS NPRM*. In both cases. commenters stress the need to develop standards on the international stage prior to adoption of any E911 rules. but do not indicate that any progress had been made in this regard,[150] We seeh comment as to whether resolution of international standards issues should in any way further delay adoption of a call center requirement or E911 rules

51. NTIA suggests that the ITU-R would be an "effective forum" for developing global standard,, panicularly under the aegis of a new Study Group 8 question developed by the **U.S.** Coast Guard, NTIA. and "MSS participants."[151] This question addresses a number of issues critical to global implementation of emergency services. including the preferred capabilities of MSS systems. preferred requirements for automatic location determination. aspects of routing MSS emergency calls that must be compatible with international routing procedure. and the enhanced information to be forwarded with emergency calls."[152] **NTIA** reports that no comments were submitted in the Study Group **8** question during the study cycle preparing for the 2003 World Radio Conference.[153] We understand that to date no recommendation has resulted from this question. We agree with NTIA that "technical studies that are performed in response to this question can he used as the basis for developing ITU-R Recommendations."[154] We strongly encourage all licensees. equipment manufacturers, public safety organizations, and any other interested parties to participate in the discussion of ITU-R Question 227/8. We are concerned that carriers have often cited the need to develop international standards for emergency calling as a prelude to rule adoption. but apparently fail to initiate or participate in the necessary global

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[146] Iridium LLC *GMPCS NPRM* reply at 14

[147] *See* ICO Global *GMPCS NPRM* comments at 6-7; SIA *GMPCS NPRM* comments and reply at 5; Comsat *GMPCS NPRM* comments at 14; USCG *GMPCS NPRM* comments at 9-10: Ministry of Posts and Telecommunications of Japan *GMPCS NPRM* comments at 1 (emphasizing that the use of **ALI** for emergency purposes should first be studied at the ITU-R). *See also* ICO *Satellite 911* Public *Notice* comments at 2; **NTIA** *Satellite 911* Pirblic *Notice* reply at 8.

[148] *E911 First* Reporr *and* ***Order*** at para. 83

[149] *Satellite 911 Public Notice* ai 7, citing *Wireless E911 First Recon* ***Order*** at para. 89

[150] See, *e.g.*, Iridium LLC GMPCS *NPRM* reply at 14: ICO Global *GMPCS NPRM* comment at 6-7: **SIA** GMPC'S *NPRM* reply at 2; Ministry of Posrs and Telecommunications of Japan *GMPCS NPRM* comment ar 1. Comment in response to the *Satellite 911 Public Notice* on this issue was similar. *See, e.g.*, ICO *Satellite 911 Public Notice* coniments at 8: Inmarsat *Satellite 911* Public *Notice* comments at 2

[151] NTIA *Satellite 911 Puhlic Notice* reply at 8 Tlir question is identified as ITU-R 227/8. "Technical and Operational Characteristics of Emergency Communications in the Mobile Satellite Service."

[152] NTIA *Satellite 911 Public Notice* reply at 8

[153] NTIA *Satellite 911 Public Notice* reply at 9

[154] NTIA *Satellite 911 Public Notice* reply at 8

discussions.

52. We seek comment on issues raised by use of emergency access codes other than 911. We understand that Globalstar has programmed its handsets to recognize a variety of emergency access codes (such as Europe's 112). and connects all such calls to an ECAS operator."[155] This suggests that resolution of at least some standards in the international arena is unnecessan. as a result of software modifications. While network recognition of multiple emergency numbers would facilitate subscriber access to call centers. we appreciate that inconsistent international standards with regard to ALI and ANI may cause more significant implementation issues (e g.. PSAPs In different nations may use incompatible equipment for processing E911 data). We invite comment on other methods Tor promoting satellite service emergency access without first resolving international standards concerns.

53. We also seek comment on liability issues in connection with recognition of multiple emergency access codes. Globalstar notes its liability concerns stemming from tlie fundamental differences between its global system and localized terrestrial wireless systems.[156] The 911 Act requires that "911" serve as tlie universal emergency telephone number within the United States Wireless carriers providing 911 emergency service are afforded liability protection to the same extent as that which wireline carriers receive on 911 cails.[157] If a satellite carrier allows subscribers to dial 112 (or any other emergency code) in the United States in order to place an emergency call. that carrier is arguably in violation oithe 911 Act and might he excluded from tlie liability protection that the statute provides (at least with regard to emergency calls placed by dialing codes other than 911). Furthermore, unless tlie satellite handset is programmed to recognize all international emergency access codes. a probability exists that a non-U.S. citizen using a handset in the United States may dial his or her native emergency code and will be unable to reach a call center or PSAP because the panicular code is not known. We seek comment concerning whether the capability of satellite systems to recognize a mu'titude of emergency dial codes violates provisions of the 911 Act. In this regard. we ask whether, if software in a handset converts any internationally recognized emergency access code into "911" at the moment the call is initiated, the carrier would preserve its liability protection under the 911 Act because the phone would be dialing 911 regardless of the user's number selection. We seek comment concerning possible methods of protecting satellite carriers from liability in the event that a non-911 code is dialed in an emergency. and h o u we could implement them.

54. In the *Satellite 911 Public Notice*, tlie International Bureau asked a number ofquestions concerning the specific effects. if an?. that adoption of E911 rules would have on tlie international compatibility of terminal equipment. We herehy incorporate by reference that section of the *Satellite 911 Public Notice* for the purpose of collecting new information.[158]

(iv) Integration of Ancillary Terrestrial Component

55. Discussion. The Commission initiated IB Docket No. 01-185 to consider whether to allow flexibility in the delivery of MSS communications in the 2 GHz. L-band. and Big LEO bands. The Notice of Proposed Rulemaking in that dochet largely explores issues concerning MSS licensees' integration of an ancillary terrestrial component ("ATC") with their networks using assigned MSS frequencies. We do not intend to pre-judge here any of the myriad issues involved with provision of ATC. We recognize that the issues raised in the ATC proceedin: could have an effect on satellite

[155] *Feb 22 Ex Parte Memo* at 2.

[156] *Feb 22 Ex Parte Memo* at 3.

[157] 911 Act a1 Section 4.

[158] *Satellite 911 Public Notice* at 7

carriers' ability to implement both basic and enhanced 911 (*e.g.*, MSS carriers with ATC would likely have access to ground-based interconnection points in a manner similar to that of cellular and PCS licensees, critical to routing 911 calls to the nearest PSAP). We seek comment on whether implementation of ATC would affect the Commission's analysis of MSS under its proposed general criteria for compliance with basic and enhanced 911 requirements. For example, we seek comment concerning consumer expectations for emergency services associated with a satellite service having a terrestrial component. We seek comment on how the network architecture of an MSS system with an ancillary terrestrial component may change the analysis of MSS deployment of E911 services consistent with our rules. We seeh comment generally concerning how any form of ATC would affect implementation of E911 for MSS, including technology considerations and roll-out schedules.

(v) Other Issues

56. Background and Discussion. The *Satellite 911 Public Notice* sought comment on several additional issues, and we take this opportunity to seek additional comment on them.[159] For example, Globalstar noted that while it routes "911 calls from all users – authorized or unauthorized" to its call center, it cannot route calls from non-initialized phones since they lack "an identifiable international mobile subscriber identity."[160] We invite comment concerning whether other carriers have or would have similar capabilities and limitations, and whether we should consider treating satellite and terrestrial wireless carriers differently as a result.[161] We also remain interested in consumer expectations concerning the emergency call features of satellite phones.[162] We invite comment concerning measures that carriers may take, such as labeling, to communicate these features to subscribers.[163] We also invite coniment concerning any other issues that interested parties find relevant to implementation of 911 services for mobile satellite services

2. Telematics Service

57. Summary. Currently, there are approximately two and a half million vehicles with telematics systems on the Nation's highways.[164] Trade press repons predict that by 2006, there will he over 20 million telematics-enabled cars and light trucks in the United States.[165] and by 2008, approximately 42 percent of all vehicles sold will have telematics systems.[166] In view of the current installed base of telematics equipment and the expectation for future growth, we seeh comment generally on the

[159] *See Satellite 911 Public Notice* at 6-7

[160] Globalstar *Satellite 911 Public Notice* comments at 13

[161] **See, e** g., Revision ofthe Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Non-initialized Phones, CC Docket No. 94-102, *Report and Order*, 17 FCC Rcd 8481 (2002); ***Order,*** DA 02-2423 (rel. Sepi. 30.2002) (granting a stay of the effective date of rules adopted in the *Report and Order*).

[162] **See** *Satellite 911 Public Norice* at 7

[163] The Coasr Guard, for example, supports a labeling requirement for equipment tha. cannot be used for emergency purposes. USCG *GMPCS NPRM* comments at 11

[164] ***See*** P. Hansen, "Special Repon on Telematics Content and Services," as reponed in Telematics Update Magazine (July 15, 2002), http://www.telematicsupdate.com, visited Nov. 5, 2002. Ex Parte *Presentation* of **ATX** Technologies, Inc. (ATX), WT Docket No. 01-108 (July 9. 2002). at p. 4 (enclosure of ATX Comments in ET Docket No. 02-135, submitied to Commission staff in response to Public Notice ofihe Spectrum Task Force)

[165] ***See*** P. Leroux, "Creativity, Reliability io Drive Teleniarics."ZDNet (Aug 10, 2002) http://zdnet.com com/2100-1007-954488 htm, visited Sept. 26, 2002.

[166] J. Wrolstad, "IBM Teams with Honda on Telematics," Wireless NewsFactor (July 29, 2002) http:/ wireless newsfactor.com/perl/printer 1879, visited Sepi. 26. 2002 (attributing forecast io Phil Magney of Telematics Research Group).

Commission's current regulatory approach to such sen ices and possible future approaches.'".

58. Background. Teletnatics can be generally defined as the integrated use of location technology and wireless communications to enhance the functionality of motor vehicles.[168] Telematics services provide a number of automotive and mobile applications including safety and concierge services through integrated vehicle communications and navigation systems that employ Global Positioning System (GPS) technology to provide directions. to track a vehicle's location. and to obtain emergency assistance in the event of an accident."" Telematics systems may include automatic crash notification (ACN) systems that havr the capabiliry to automatically call an emergency services dispatcher for help in the event of a car accident.[170]

59. In offering these services. telematics providers rely on the service of mobile wireless providers by contracting with them for minutes of mobile telephony use. The panicular services prov ided may vary, depending on the package or level of service that the car owner purchases. and may also include voice CMRS tliat is resold a i an additional or premium service option to the customer.[171] A majority of telematics services, including the resold voice service. currently rely on analog cellular systems deploying the Advanced Mobile Phone Service (AMPS) compatibility standard. Some digital systems are being either deployed or developed.[172]

60. Telematics providers may offer their services using original equipment manufacturer (OEM) equipment embedded in new vehicles. Auto manufacturers may contract with various equipment or platform vendors in offering telematics services to purchasers. and aftermarket equipment or accessories are becoming available.[173]

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[167] We noie at the outset that OnStar Corporation (OnStar) recently tiled a petition for a ruling that in-vehicle, embedded telematics devices operating on wireless carrier networks utilizing handset-hased 9 1 1 Phase II Solutions are not "handsets" as that term is used in current Commission rules adopted in CC Docker No. 94-102. *See Ex Parte* Submission, In the Maner of Revision ofthe Commission's Rules to Ensure Compatibility with Enhanced 91 1 Emergency Calling Systems, CC Docket No. 94-102. from K. Enborg, Vice President and General Counsel. OnStar. to T. Sugrue, Chief, Wireless Telecommunications Bureau. Federal Communications Commission (Dec 3, 2002) (also petitioning for ruling that those devices are nut included in the carrier subscriber base referenced in the orders in that proceedin:) Comment will be sought on the specific issue raised in this *ex parte* petition in a separate Public Notice in CC Docket No. 94-102. OnStar is a member ofthe National Emergency Number Association's (NENA) Nan-Traditional Technical Cornminee and that committee's Automatic Crash Notification (ACN) subcommittee.

[168] In rhe Maner of Year 2000 Biennial Regulatory Review – Amendmenl of Pan 22 ofthe Commission's Rules to Modify or Eliminate Outdated Rules Affecting the Cellular Radiotelephone Service and other Commercial Mobile Radio Services. WT Docket No, 01-108, *Report and Order*, FCC 02-229 (rel. Sept. 24, 2002) (*Biennial Review Reporr and Order*), at para. 18, n.56.

[169] *Seventh Wireless Competition Report*. at 13061-62 *See also. Biennial Review Repori and Order*, at para. 18 n 56.

[170] *See Biennial Review Reporr and Order*, at para. 18. n.56.

[171] *See, e g* . OnStar, *What is OnStar: Services*, http://www.onstar.com/visitors.html/ao_features htm. visited Sept 13, 2002.

[172] *E.g* , the Ford Vehicle Communications Systems (VCS) requires a service contract with Sprint PCS. Daimler-Chrysler is developing a telematics offering that is based on WLAN technology that does not require reliance on the public switched telephone network (PSTN).

[173] "Virtual Wave. Airbiquity Offer Wireless Location-Based Services." *CTIA Daily News* (Sept 19, 2002) (attributing report to Instant Messaging Planet) ctiadailynews+647290.51471663.1@reply.wow-com.com. *See* www.roadstargps.com.

61. *Provision of Emergency Services through Telematics Services.* Telematics service providers generally process emergency calls from vehicle occupants in two ways. First. customers can make emergency calls by pressing a "hot button" installed in the vehicle or in the handset associated with the vehicle's telematics unit.[174] Pressing the "hot button" is not the same as dialing 911 to make an emergency call. A telematics-based emergency communication. or "hot bunon" call. is routed over the network of the underlying carrier to a national call center operated by the telernatics service provider. If available. location data from a satellite-based CPS capability integrated with the telematics equipment in the vehicle can be transferred to the call center. where the caller's location can be computed.

62. In the event the telematics-based emergency communication is disconnected. the call center representative can call back the vehicle to get more information about the emergency. The call center advisor also can orally relay pertinent emergency information. including location and call-back number. to a PSAP or other appropriate local emergency authority, such as a sheriffs office. Further. the call center also has the capability to contact aiid request the dispatch of emergency assistance from various emergency authorities.[175]

63. For those telematics customers who also subscribe to a jointly pack; ged mobile voice service. the customer can choose to dial 911, rather than using the telematics-based emergency communication option. The 911 call then is routed over the network of the underlying wireless carrier and is delivered directly to a PSAP or other appropriate local emergency authority. consistent with current requirements of Commission rules.[176] The telematics system will not block transmission of the call-back number information. However, location information on direct-dialed 911 calls is only available if the underlying wireless carrier employs a network-based ALI system. because the GPS tracking used by telematics is a satellite-based transmission that requires coordinated processing of data between the installed unit. the GPS satellites, and the telematics call center.

64. Discussion. We begin our inquiry by asking what. if anything. should he required of telematics services in light of their "hot button" and resold CMRS service capabilities. We then ask what expectations customers have with regard to emergency services offered through teleniatics systems. We also ask about current technical issues related to the provision of emergency seivices through telematics services. Commenters are also asked to address matters associated with Automatic Crash Notitication (ACN). Finally. we seek comment on the Commission's legal authority to address telematics providers and equipment manufacturers.

65. *Appropriate Model for* **Access** *to Emergency Services via Telematics Systems and* ***C'usronrer*** *Expectations.* In addition to 911 calls placed through ajointly packaged mobile voice service. telematics services currently provide access to PSAPs through an intermediary: the telematics call-center advisor. The Commission's rules currently contemplate situations in which CMRS customers receive service through an intermediary. specifically. a dispatcher.[177] In light of the specific nature of telematics services

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[174] Older telematics units place the "hot button" feature in the wireless handset. In newer. built-in units. the "hot bunon" is usually placed in the dashboard or overhead near the rex view mirror in the vehicle. The "hot button" typically displays a symbol (*e*g., "Red-Cross" shaped character) or letters (*e g*., "SOS") that signify that the button is to be pressed in case ofernergency. ***See*** http://www.onstar.com/visitors/html/ao_emergency.htm; http:l/www.lincolnvehicles.com/vehicles/interior asp?sVehi=LS.

[175] OnStar. *What is OnStar* ***Services*** (visited Sept 13. 2002) <http://www onstar.com/visitors/html ao_features.htm>.

[176] *See* 47 C.F.R § 20 18(b); 47 C.F.R §§ 64 3001. 64 3002.

[177] 47 C.F.R § 20.18(k) (stating that "a service prouder covered by [Section 20.18] who offers dispatch service to customers may meet the requirements of this section by either complying with the requirements **set** forth in paragraphs (b) through (e) ofthis section or by routing ihe customer's emergency calls through a dispatcher. **If** the

(continued....)

and the expectations of its purchasers. should sonic form of this model (*i.e.*, emergency service through an intermediary accessible through a telematics "hot bunon") be **tlie** primary manner in which emergency services are offered to users of telematics systems?

66. We note that this approach may well provide certain benefits to PSAPs by taking advantage of the ability of such call centers to act as an information filter to address a variety of circumstances and information needs. For instance. with tlie capability of call center representative: to call hack the vehicle. call centers may sene as a screen for non-emergency calls. thus alleviating the burdens **that** PSAPs face in administratively handling their increasing wireless emergency call volume.[178] This call-back capability also allows call centers to screen for the particular type of emergency faced or type of assistance needed. Thus. they can aid in determining the appropriate response and emergency services provider to be deployed, based on the circumstances of each incident.

67. In addition to acting as a filter for non-emergency calls. telematics services also have the potential to offer additional information to PSAPs that would not be available through a "typical" 911 call. For example, there are programs currently being tested on a regional or local basis that entail a relay of the intormation electronically from the telematics units to a PSAP and/or emergenc! senice providers.[179] These programs depend on the capability of some call centers to pass the geographic location information to another message processing unit operated by some emergency authorit). or provider.[180] We seek comment on plans for **tlir** integration ofthe systems of PSAPs and telematics providers. We seek comment on these and other possible advantages telematics providers may provide to PSAPs.

68. Certain issues do arise. however, using the dispatch inodel for emrrgency service access. For instance, call centers would decide to which PSAP. local emergency authority, or emergency service provider they route the emergency information. We seek comment on how we m:ght address issues arising from this role. particularly with regard b relaying or routing information, including callback and location information. We also seek comment on the relationships between teleniatics providers, their call centers, PSAPs. emergency service providers. and state and local law enforcemen; agencies.

69. Another issue would be the timeliness of the deliver! of calls to a PSAP or other appropriate

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service provider choosrs the latter alternative. it must make every reasonable effort **to** explicitly notify its current and potential dispatch customers and their users that they are not able to directly reach a **PSAP** by dialin, a 911 and that, in the event of an emergency, the dispatcher should be contacted ") Paragraph (b) covers basic 911 Service requirements; paragraph (c). TTY access to 911 services. paragraph (d) Phase I E911 requirements; and paragraph (e). Phase II E911 requirements **See47** C.F.R § 20.18(b)-(e).

[178] *See* CTIA's 1994 Wireless 9-1-1 and Distress Calls Statistics: NENA Statistics for Year Ending Dec. 31, 1999. Report Card to the Nation (Sept. 11, 2001).

[179] For example. an Integrated ITS (Intelligent Transportation System) Public Safety System is currently being deployed in Virginia's Shenandoah Valley that automates and coordinates the interactive responses of technology providers, public safety and medical professionals. emergency service personnel. and transportation experts to vehicle accidents. This system uses an "Intelligent Message Broker" (IMB) thar integrates geographic informarion and routes data based on operational rule, **to** which participating agencies have agreed in advance. *See* John Erich, EMS Magazine. *Information Integration: Virginia Crash Response System*, (visited Sept. 6, 2002) http://www.comcare.org/research_news/comcare_inthenews_020607emsmagazine.htm (Virginia IITS Public Safety System).

[180] *See*, **e** g., Virginia IITS Puhlic Safety System; *Intrado, Ford and the Greater Harris County, Texas, 9-1-1 Emergency Network Join* Force,. Telemaiics Update Magazine. Sept. 9. 2002 (visited Sept 9, 2002, http://wwwtelematicesupdate com/print.asp?/news=31649 (concerning Harris County, Texas ACN/telematics program for police vehicles)

local emergency authority. The delivery of *the* call-back number *to* a PSAP may be affected. because even though the call-back number is displayed on the call center's terminal screen for oral relay, that number may iiot be delivered directly *to* a **PSAP.** Achieving such capability may not be technically feasible in terms of modifying the system.; that telematics providers are currently deploying. We therefore seek comment on these aspects regarding the timely provision of emergency senices to telematics users.

70. Another issue of concern is notice to consumers regarding the manner in which "hot button.' calls are processed Section 20.18(k) of the Commission's rules currently require that if emergency calls are routed through a dispatcher. then the system must "make ever) reasonable effort to explicitly notify its . . . customers . . . that they are not able to directly reach a PSAP . . . ."[181] Commenters should address what may be reasonable notification in the context of a telematics "hot button" call. compared to a 911 dialed call. In that regard, we invite comment on what approaches would be most useful tor telematics providers to give notice to their customers through equipment labels. instruction manuals, etc. of any current limitations of telematics service in directly transmitting emergency information to a PSAP.[182]

71. In light of the above observations and questions, we **seeh** comment on how we might nmend Section 20.18(k) *to* account for telematics systems.

72. We also seek comment on implementation issues that may apply tu the provision of emergency services information through telematics services. For example, some telematics providers are, or will soon be. planning and deploying a transition from an underlying analog-based system to a digital one.[183] We seek comment on the impact that this transition might have on the implementation of any potential requirements or guidelines. We also seek comment on whether the pacr of deployment among PSAPs in requesting E911 Phase I and Phase II capability from wireless carrier? would have any effect on approaches we might take were we to impose those requirements on telematics providers. Further, we invite comment on how life cycle development factors for both vehicles and the telematics systems to be installed may affect any implementation time frames to be considered. Commenters should address whether general time frames proposed above should apply or whether we would need to modify them significantly to account for the lead-in times due to life cycle development.[184]

73. Finally, we seek comment on what, if any, emergency service can be requested from a non-service initialized telematics device. For vehicle owners who have let their telematics subscriptions lapse or who are driving vehicles with telematics units that have not been activated by the automobile dealer. will emergency assistance be available over a "hot button" or through the resold CMRS voice service?

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[181] 47 C.F.R. § 20.18(k)

[182] For example. we seek comment on whether there should be labels *to* indicate that dialing 911 will connect the caller io a **PSAP** or other local emergenc! authority rather than the telematics provider's call center or advisor.

[183] *See generally*, *Biennial Review* **Reporr** *and Order*, at paras. 18-20 (discussing the elimin itron of the analog cellular compatibility standard in regard *to* telematics providers and concluding that a five year transition period of the requirement is sufficient for telematics providers *to* be able to deploy their service offerings on carriers' digital networks).

[184] For example. the development life cycle for automobiles may be 5-7 years. bur for telematics systems that are integrated, the life cycle planning involved may be 3 years before the model is launched. Such ***systems*** may also be affected by considerations ofpolenrial technological obsolescence *See, e g.*, S. Bhagavatula, "The Bigger Picture – How Important Is Telematics for Moving the Auto Industry as a Whole." Telematics Systems 2002, Gothenburg Sweden, TelematicsUpdate Magazine, www telematicsupdate coin *See also, Biennial Review Report and Order*, at paras. 18-20 (addressing significant impacts, *e g* . development cycles of vehicles. hardware and technology programs, which would be mitigated by reasonable transition period of five years for elimination of Commission requirement lor analog compatibility standard).

74. *Automatic Crash Notification (ACN).* ACN functionality allows for the transmission of crash information (*i.e.*, whether the vehicle rolled over, the measured deceleration of the vehicle at the time of the crash, the principal direction of force) to the telematics provider, and possibly to emergency responders. We seek comment on what, if any, role the Commission should play regarding delivery of ACN data from telematics providers. We note that requiring delivery of ACN to PSAPs may pose significant problems of technical feasibility and implementation not only with regard to the current state of ACN, but also with regard to the current capability of many PSAPs that are not yet even ready to handle and process Phase I and Phase II data. We seek comment on these technical difficulties.

75. In addition, with the latest ACN technologies yet to occur, we realize that direct delivery of emergency location and other information may be achieved only after affected parties agree it is technically and operationally feasible. The prospect of Advanced Automatic Crash Notification (AACN) in the near term also may pose additional issues that we need to consider.[184] We seek comment on all aspects of potentially extending our E911 rules to include required delivery of ACN data by telematics providers to PSAPs.

76. *Legal Authority.* We ask commenters to address the legal authority of the Commission to place basic and enhanced 911 requirements, or similar requirements, on telematics service providers, both for telematics-based emergency communication services and resold mobile voice service. We also invite comment on the Commission's authority to impose requirements needed to deliver enhanced 911 service on equipment manufacturers.

77. We seek comment on the particular application of the statutory authority on telematics providers.[185] Specifically, the authority the Commission has pursuant to section 201(b) of the Communications Act of 1934, as amended (the Act),[187] extends to commercial mobile services by operation of section 332 of the Act.[188] "Commercial mobile service" is defined as "any mobile service (as defined in section (3) that is provided for profit and makes interconnected service available (A) to the public or (B) to such class of eligible users as to be effectively available to a substantial portion of the public."[189] Therefore, at least, insofar as telematics service providers offer a mobile service to the public for profit or offer a functionally equivalent service to the public, it appears that they are to be treated as a commercial mobile service provider.[190] Currently, the Commission's rules require *licensees* to comply with its E911 requirements.[191] We ask commenters to address whether we should extend these requirements to telematics services providers and what criteria we should adopt to apply them.

78. We next seek comment on whether the *911 Act* can be read to include telematics service

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[184] In the Matter of Year 2000 Biennial Regulatory Review – Amendment of Part 22 of the Commission's Rules to Modify or Eliminate Outdate Rules Affecting the Cellular Radiotelephone Service and other Commercial Mobile Radio Services, WT Docket No. 01-108, *Ex Parte* Letter to M. Dortch, Secretary, Federal Communications Commission From J. Cooney *et al.*, General Motors Safety Communications (Aug. 1, 2002) (concerning the planned deployment of AACN, based on AMPS, in selected OnStar equipped 2004 model vehicles).

[185] *See infra* Resold Cellular and PCS Service, III.B.4 (para. 96).

[187] 47 U.S.C. § 201(b) (providing that the Commission "may prescribe such rules and regulations as it deems necessary" in carrying out the provisions of [the Telecommunications] Act.").

[188] 47 U.S.C. § 332 (stating that providers of commercial mobile services are to be treated as common carriers for purposes of section 201).

[189] 47 U.S.C. § 332(d)(1).

[190] *See infra* Resold Cellular and PCS Service, III.B.4 (para. 96).

[191] 47 C.F.R. §§ 20.18(b)-(i).

providers.[192] In the *911 Act*, Congress stared that its purpose in adopting the Act was to encourage and facilitate the prompt deployment of a seamless. ubiquitous. and reliable end-to-end infrastructure for communications to meet the Nation's public safety and other communications needs."[193] Congress found that *emerging technologies* could be a critical component of such an end-to-end infrastructure.[194] We seek comment on whether the *911 Act* provides a jurisdictional basis for requiring compliance with our E911 rules or other similar requirements by telematics service providers.

79. Concerning equipment manufacturers. we note that the Commission nas previously used tlie authority granted by Sections 151 and 154 of Act to regulate telecommunications equipment manufacturers.[195] To the extent that either embedded or aftermarket telematics equipment are "customer premises equipment," the Commission hasjurisdiction to regulate such "instrumentalities" based on sections 151 and 154.[196] **We** seek comment on ourjurisdictional basis for requiring manufacturers of such equipment to comply with our E911 rules. by requiring them. for example. to ensure that their equipment is capable of delivering call-back and location information to the appropriate PSAP.[197]

SO. In addition, we seek comment on what limitations might exist on the Commission's authority to impose requirements (1) on telematics service providers tor the purpose of ensuring that their subscribers can have either 911-dialed call, or telematics-based emergency communications delivered to tlie appropriate local emergency authority. and (2) for ensuring compliance with the requirements of the Commission's E911 Phase I and Phase II Rules.

3. Multi-Line Telephone Systems

81. Summary. Below, we seek comment on whether we should require multi-line systems, including wireline, wireless and Internet Protocol-based systems. to deliver call-back and location information, In this regard, we seek comment on the appropriate role for the Commission in this matter. We then seek comment on various proposals that have been brought to our attention by interested parties.

82. Background. **A** key feature of multi-line systems is that they allow multi-line businesses and multi-tenant building managsrs to align their external telecommunications traffic needs with demand from their internal users. which eliminates the need for an external line for each telephone within their operation. **As** such. while each telephone within tlie organization has a unique telephone number that the multi-line systems recognizes for directing internal traffic and inbound external calls. outbound external calls may not have a unique telephone number since they would be carried over lines capable of being used by any telephone set within the multi-line systems.[198] Over time these systems have developed to include wireless systems and IP-based private networks.

83. The Commission initially sought comment on whether to require multi-line systems to

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[192] *Y11 Act*, Pub. L. No. 106-81, 113 Stat. 1286

[193] 47 U.S.C. § 615 note (emphasis added).

[194] *See id*

[195] 47 **U.S**C 151(a). 47 U S.C. 154 (i). *See e.g.*, 47 C.F.K. Pan 68

[196] *See infra* Multi-Line Telephone Systems. III.B.3 (para. 91)

[197] We also note that Section 255 requires that customer premises equipment be accessible and usable by individuals with disabilities, if readily achievable. *See* 47 U.S.C. § 255(b)

[198] Calls made from outside the multi-line systems to persons in the multi-line systems are made to the unique number assigned to that person in the multi-line systems and are directed accordingly.

comply with our Pan 68 rules in 1994.[199] In the *1994 Notice*. the Commission sought comment on a range of issues, including:

(1) the multi-line systems technical standards needed to ensure compatibility with **the** E91 **I** network;
(2) the extent to which each telephone station should be capable of being identified:
(3) whether attendant notification capability should be required of each niulti-line system:
(4) whether verification procedures are needed to ensure the proper functioning of a multi-line systems owner's E91 **I** capability:
(5) whether current database management arrangements concerning the accuracy and timely transmission of **ALI** are adequate;
(6) whether standards are needed for information transmitted to be displayed on a PSAP attendant's screen:
(7) whether standards are needed regarding direct multi-line systems access to the ALI database;
(8) what services should incumbent LECs provide to ensure multi-line systems connection with the E91 I network:
(9) privacy and liability issues: and
(10) issues regarding access for people with disabilities

84. **As** the Commission discussed in the *1994 Notice*. some state and local governments have passed regulations and ordinances that require multi-line systems equipment to be compatible with the 911 systems deployed in the given state or locality.[200] Based on an informal staff survey of state regulations, it appears that seven states or similar jurisdictions have regulations requiring the delivery of call back and location information by multi-line systems."[201] Eleven states have passed legislation that provides municipalities with authority to adopt specific E91 I requirements.[202] We note. however. that **a** large number of states apparently have yet to adopt E91 I regulations for multi-line systems.

85. Organizations such as National Emergency Number Association (NENA) have provided critical support to assist manufacturers. states. and telecommunications providers develop "best practices" and technical standards to assist in developing E91 I-capable multi-line systems.[203] Furthermore, maiiufacturers such as Proctor. Teltronics. and Truecomm have developed equipment that is capable of providing some form of call-back or location information through either new PBXs or add-ons to retrofit existing PBXs.[204] These private associations and entities have fostered the development of a market for multi-line systems that provide critical E91 **I** callback and location information in the absence of a federal

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[199] Revision ofthe Commission's Rules **to** Ensure Compatibility with Enhanced 91 **I** Emergency Calling Systems, *Notice of Proposed Rulemaking*, 9 FCC Rcd 6170 (1994) (*1994 Notice*). More *specifically*, in that *Notice* the Commission only considered PBX systems. We **seek** comment on rhs broader category of niulti-line systems in this proceeding to address there similarly-situated services.

[200] *1994 Norrce.* 9 FCC Rcd. at 6177 para 11

[201] ***The*** following states have adopted legislation *that* requires some form of callback and location information requirements for multi-line telephone systems' Colorado. Illinois. Kentucky. Mississippi, Texas, Vermont. and Washington. Our count ofthe number of states with regulations includes the District of Columbia and Pueno Rico.

[202] These states are. Alabama. Alaska. Idaho. Kansas. Maine. Mississippi, Missouri, Nevada. New Hampshire, New Jersey, and Washington.

[203] *See* <http://www.nena org> (visired Oct. 2. 2002)

[204] **See** <http://www.proctronic.com> (visired Oct. 7. 2002): <http: www teltronic.com> (visited Oct. 2, 2002); <http://www.truecom.com> (visited Oct. 2, 2002).

directive.

86. Discussion. We reiterate here our previous conclusion that the delivery of accurate location information and callback numbers is vital for a local emergency response service to be effective and is clearly in the public interest. We are aware rhar public safety representatives have concerns that callback and individual station location information is not automatically available today when 911 calls are made from behind multi-line systems and from individual stations in IP-based private network. In tlie absence of requirements from either federal. state. or local governments. however. some entities may opt not to deploy the updates to their multi-line systems necessary to provide **tlir** proinpr delivery of accurate callback and location information. There also may well be technical issues involved in providing such information from IP-based private networks. We are seeking cominenr both specifically and generally on whether the Commission should be takin: action on these issues.

87. We first seek comment on whether actions by state and local governments. associations. aiid private entities have adequately developed regulations. best practices. and device, that are capable of providing callback and location information for multi-line systems If commenters believe that state aiid local governments and the private sector actions are iiot sufficient. we ask that the) propose actions that this Cornmission could take to facilitate the deployment of multi-line systems that are capable of delivering call-back and location information to PSAPs. If commenters contend that a lack of uniformity in slate regulations presents a problem thar must be solved by overlaying a federal standard. we seek specific comment on how best to clarify such a federal standard.'"' **As** tlie Commission has noted in other proceedings, because of the local nature of a majority of emergency calls. states and localities have an important role to play in developing policies concerning 911 calls.[206] Individual state and local communities may be better able to determine their E911 needs and tailor their laws to better reflect the needs of the panicular communities **that** they affect.'"' We also seek comment on whether there are any workplace safety regulations or regulations *of* other agencies. state or federal, that should affect our consideration of access to emergency services from multi-line systems. Commenters can also address the Model Legislation proposed by NENA: as well as a consensus proposal put forward by the "E911 Consensus Group.'."'

88. *NENA Model Legislation*: NENA has proposed model legislation that would allow states, through state legislation. to adopt many of **tlir** standards and protocol associated with delivering E911 services through multi-line systems.[209] Their proposal recognizes that states should establish their own E911 standards to accommodate tlie introduction of new technologies.[210] NENA's model legislation would have the Commission modify ponions of its Pan 68 rules to codify cenain changes and encourage

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[205] *See e.g.*, GE Comments at 13-13

[206] *Policies and* **Rules** *Concerning Operator Service Providers*. CC Docker No. 90-313, Report and Order. 6 FCC Rcd. 2744 para. 69 (1991) (*TOCSIA*)

[207] We note that in the *TOCSIA* proceedinp the Commission ultimately adopted a minimum federal standard that it limited by explicitly stating rhar the standard was nor intended to preempt an! slate requirements. *TOCSIA* , *6* FCC Rcd. at 2744 para. 69.

[208] The E911 Consensus Group consist of representatives from National Emergency Number Association **(NENA),** Association of Public-Safer?Communicalions Officials – International. Inc. (APCO). National **Association** of State 9-1-1 Administrators, **Ad** Hoc Telecommunications Users Committee. and MultiMedia l'elecommunicarions Associarion.

[209] *See* NENA *Technical Information Document on Model Legislation Enhanced* 9-1-1 *Multi-line Telephone Systems*. available at <http://www nena.org> (visited Ocr. 2. 2002) (*NENA Model E911 Legislation*).

[210] *See* ***id.*** at § 6

industry to derelop generally applicable standards for states to adopt."[211] We welcome coninlent on tlie specific aspects o f the *NENA Model Legislation*. In considering their proposal. we encourage commenters to discuss the technical and operational feasibility o f multi-line systems being able to comply with their proposal. We also encourage commenters to address tlie implementation schedule as set out in the *NENA* ***Model*** *Legislation*.

89. *E911 Consensus* ***Group*** *Proposal*: In April 1997. the Commission sought comment on a consensus proposal regarding multi-line systems and delivery of call-back and location information to an appropriate PSAP.[212] Three commenters responded. only one of which was not pan of the E911 Consensus Group."[213] While the commenters agreed that tlie *Consensus Proposal* was a reasonable approach. we seek to refresh rhe record of that proceediiig and below outline the contents of that proposal.[214]

90. The E911 Consensus Group put forth a comprehensive plan that would require millti-line systems operators to comply with certain requirements for the delivery ut ANI and ALI to an appropriate PSAP. The *Consensus Proposal*, if adopted would be implemented by the Commission and would preempt inconsistent state and local regulations.[215] The proposal recognizes the different uses for multi-line systems. such as business multi-line systems. shared residential multi-line systems. and hotels and motels and proposes differing requirements for these systems.[216] The proposal also addresses issues concerning compliance dates. technical capabilities. exemptions. waivers. and dialing patterns. We welcome comment on the specific aspects of the *Consensus Proposal*. not necessarily mentioned here. *e.g.*, requirements for assigning a unique ANI/ALI for each 40.000 square feet in a building and implementation schedules."[217]

91. ***Legal*** *Authority*: We also seeh comment. generally, on the Commission's authority to require compliance with its E911 rules by manufacturers of multi-line systems. Section 151 ofthe Act grants the Commission broad authority to regulate the facilities used in conjunction with providing interstate communications and enumerates specifically tliat such authority extends to regulation o f these facilities "for the purpose o f promoting safety of life and property through the use o f wire **and** radio communications.'."[218] Moreover, section 154 states that "the Commission may perform any and all acts. make such rules and regulations. and issue such orders. not inconsistent with this Act. as may be necessary in the execution o f its functions."[219] We note that the Commission has previously used the

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[211] *See* ***id*** at § 6. Illinois has adopted a statute that appears to be modeled on the NENA proposal. 50 111. Coinp Stat. § 750.

[212] *See Letter from* James S. Blaszak, Counsel for the **Ad** Hoc Telecommunications Urers Group. to William F. Caton, Acting Secretary. Federal Communications Commission (Apr. 1, 1997)(*Consensus Proposal*). The Consensus Agreement is available on the Commission's website at <http:/ gullfoss2.fcc.gov/prod/ecfs/comsrch_v2.cgi>. *See also NENA Technical Information Document on Model Legislation: Enhanced 9-1-1 Multi-line Telephone Systems*, available at <http://www.nena.org> (visited Oct **2.** 2002) (*NENA Model E911 Legislation*)

[213] *See* comments of Lucent Technologies Inc

[214] *See* comments of **Lucent** Technologies Inc. at 7

[215] *See Consensus Proposal* at 2, 5

[216] *See generally Consensus Proposal*. For example, some business users have converted their multi-line systems to IP telephony-enabled systems

[217] *See supra n* 212

[218] 47 U.S.C § 151(a)

[219] 47 U S.C. § 154(i).

authority granted by these sections to regulate telecommunications equipment manufacturers.[220] Additionally, to the extent that multi-line systems are "customer premises equipment," the Commission hasjurisdiction to regulate such "instrumentalities" based on sections 151 and 154.[221] We seeh comment on our Jurisdictional basis for possibly requiring telecommunications equipment manufacturers io comply with our E911 rules (*e.g.*, requiring manufacturers of multi-line systems to ensure that their equipment is capable of delivering call-back and location information to the appropriate PSAP).

4. Resold Cellular and PCS Senice

97. Summary. We next seek conimriit on any issues that arise uhen consumers buy service from carriers and other service providers that resell minutes of use on facilities-based wireless carriers' networks. In particular, we seek comment on whether ne should impose our 911 requirements or similar requirements. on resellers. We also seek comment *on* uhether we should impose a niore express obligation on either the reseller or the underlying licensee to ensure coinpliancc with our E911 rules in these situations.

93. Background. Resellers otter wireless voice service to consumers by purchasing airtime at wholesale rates from facilities-basrd providers and reselling it at retail prices:.[222] The Commission's E911 rules do not apply directly to resellers, rather the) only directly apply to licensees. Thus. in a resale situation. the underlying facilities-based licensee is obligated to deploy E911 rapabilities In the network used by the reseller. As of 2001. the resale sector accounted for approximately five percent of all mobile telephone subscribers."[223]

94. Discussion. We seek comment on whether resellers meet the genera' criteria we set out above and therefore should he required to provide access to E911.[224] We also seek comment on possible obstacles that resellers face in ensuring the delivery of basic and E911 services.

95. We also seek comment on whether we should impose a more express obligation on either the reseller or the underlying licensee to ensure compliance with our E911 rules in these situations. Currently our rules squarely place E911 compliance on the *licensee*. When the Commission had in place rules governing resale of CMRS. it refrained from imposing specific obligations concerning the agreements

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[220] *See e.g.*, 47 C.F.R. pt 68. *See also* Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems. CC Docket No. 94-102, RM 8143. *Second Report and Order*, 14 FCC Rcd. 10954 (1999) (requiring handset manufacturers to incorporate procedures into the handset to recognize uhen a 9-1-1 call is made and to override any programming in the mobile unit that may prevent that call from being carried by another carrier) (*codified* at 47 C.F.R. § 22.921).

[221] Section 151 states that the Commission is to exercise its authorit) to promote "safety of life and property through the use of wire and radio communications." *See* 47 U.S.C.§ 151. Section 153 (33) defines "radio communication" as "transmission by radio of writing, signs, signals, pictures and sounds of all kinds, including all instrumentalities. facilities. apparatus. and services ... incidental to such transmission. *See* 47 U.S.C.§ 153(33). Section 153 (52) defines "wire communication" as "transmissionof writing. signs. signals. pictures and sounds of all kinds by aid of wire. cable. or other like connection between the points of origin and reception of such transmission. including all instrumentalities. facilities, apparatus, and services .. incidental to such transmission. See 47 U.S.C.§ 153(52). *See also, Computer and Communications Industry Association v FCC*. 693 F.2d 198. 213 (DC. Cir. 1982), cert. denied *Louisiana Public Service Commission v FCC*. 461 U.S 938 (1983) (*holding* that the Commission had ancillary jurisdiction over customer prcrniso equipment based on 151 and the definition of wire and radio communication).

[222] *See Seventh Report on Wireless Competition* at 40

[223] *See id.*

[224] *See supra* para I;

between resellers and facilities-based CMRS providers. Rather. the Commission only required tliat similarly situated customers receive similar pricing. terms. and conditions. and that the facilities-based CMRS provider not directly or indirectly restrict resale."[225] We seek comment on whether we should require the reseller of cellular and PCS service to ensure compliance with our basic and enhanced 911 rules should we decide to extend our rules to these providers. Alternatively. we could require the underlying facilities-based licensee to ensure that its resellers offer basic and E911 service compatible with its method of providing these services. In discussing upon whom the obligation should be placed. commenters are encouraged to discuss operational issues that may arise. For example. if the obligation is placed on the underlying facilities-based licensee. and that licensee has chosen to meet its obligation through deploying a handset-based solution. should the reseller's handsets be counted towards the licensee's compliance obligations as detailed in our rules?"[226] Moreover. commenters should discuss how these issues are currently resolved between tlie panies For example. does the underlying licensee require tlie reseller to inform its customers that it. the reseller. is wholly responsible for providing E911 service?

96. *Legal Authority and Implementation Issues* We next seek comment on our authority to requirr compliance with the E911 rules by wireless resellers. The Commission has jurisdiction over interstate telecommunications and the providers of such services."[227] Specifically. section 201(b) provides that the Commission "may prescribe such rules and regulations as it deems necessary in carrying out the provisions of [the Communications] Act."[228] Such authority extends to commercial mobile services by operation of section 332 of the Act."[229] That section states that providers of commercial mobile services are to be treated as common carriers for purposes of section 201. and section 332 prohibits the Commission from specifying any provision of section 201 as inapplicable."[230] Further. as the definition of "private mobile wireless" indicates, even private mobile service providers are to be treated as commercial mobile service providers to the extent that the services they offer fit within the definition of commercial mobile service.[231] "Commercial mobile service" is defined as "any mobile service (as defined in section 3) that is provided for profit and makes interconnected service available (A) to the public or (B) to such class of eligible users as to be effectively available to a substantial portion of the public.."[232] Therefore. to the extent that wireless resellers offer their mobile service to the public for profit or offer a functionally equivalent service to the public. they are to be treated. as section 332(c)(1) requires. as a common carrier. As such. the Commission has jurisdiction to requirc compliance with our E911 rules. We seek comment on this analysis of our jurisdictional basis for possibly requiring wireless resellers of CMRS to comply with our E911 rules. We also note that currently our rules clearly state that *licensees* are required to comply with our E911 requirements."[233] Should the Commission extend these requirements to resellers as well?

97. Lastly. we seek comment on developing appropriate time frames for compliance should we

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[225] *See* Interconnection and Resale Obligations Pertaining to Commercial Mobile Radio Services. *First Reporr and Order.* CC Docket No 94-54. 11 FCC Rcd 18455. 58-59 paras. 12-11.

[226] 47 C.F.R. § 20.18(g).

[227] 47 U.S.C § 201

[228] 47 U.S C. § 201(b)

[229] 47 U.S C § 332.

[230] 47 U.SC. § 332(c)(1).

[231] 47 U.S.C § 332(d)(3). "Private mobile service" is defined as "any service that is not a commercial mobile service or its *functional equivalent.*"

[232] 47 U.S.C § 332(d)(1).

[233] 47 C.F.R. §§ 20.18 (b)-(i).

decide to include resellers in our E911 rules. Given the fact that many if not all. resellers currently offer some level of 911 service to their customers. and that their service offerings to the public rely on the network of licensees that are required to comply with our E911 rules. we believe that should we decide to impose requirements on resellers to comply with our rules. only a short transition appears necessary. We also recognize, however, that a reseller's ability to comply with our rules is directly related to the underlying licensee's compliance. We therefore seek comment on whether it would be more appropriate for the Commission to clarify that while resellers are obligated to provide E911 service to their customers. they are only obligated to the extent that the underlying licensee has met its obligation.

5. Pre-paid Calling

98. Summary. In this section. we seek comment on whether there is any need to impose any new requirements to access to emergency services by consumers of pre-paid offerings. As with resold service. the underlying licensee is subject to our basic and enhanced 911 rules.[234] We seek comment on whether we should impose E911 requirements directly on pre-paid calling providers that are not also licensees. and whether the underlying licensee should be required to ensure compliance with our E911 rules by the pre-paid calling provider.

99. Background. Pre-paid service. in contrast to post-paid service. requires customers to pay for a fixed amount of wireless service minutes prior to making calls."[235] There are two sets of providers in this arrangement. CMRS providers primarily offering post-paid calling plans: and independent third parties. For example, Verizon Wireless offers both a post-paid option and a pre-paid option.[236] Additionally, independent third parties offer customers prepaid calling cards for use on the wireless networks of Sprint PCS, AT&T, and Verizon, for example, through retail locations such as 7-11. Analysts estimate that approximately 8 to 10 percent of wireless phone users in the U.S. subscribed to pre-paid plans in 2001.[237]

100. Discussion. The same issues that arise in the context of resold cellular and PCS service also relate to prepaid calling. and we encourage commenters to address those issues. For example, as with resellers, independent prepaid calling providers offer service over an underlying licensee's network. We first ask commenters to inform our understanding of how the provision of access to 911 service is currently resolved between the parties. Therefore. the question also arises in this contest as to how best to structure the obligation to ensure compliance with our rules: do we obligate the provider of the pre-paid calling plan or the underlying licensee. We also ask cotnmenters generally about how best to structure E911 obligations in this context. In addition. we seek comment on whether we need to address these issues any differently when the prepaid calling provider is the underlying licensee or affiliate. as opposed to an independent entity.

101. *Legal Authority and Implementation Issues.* As with resellers. many independent pre-paid calling service providers offer some level of 911 service to their customers, and their service offerings rely on the network of carriers that are required to comply with our E911 rules. Moreover. the ability of a pre-paid calling service provider *to* comply with our rules is directly related to the underlying facilities-based licensee's compliance. We therefore seek comment on whether it would be more appropriate for the Commission to clarify that while independent prepaid calling service providers are obligated to provide E911 service to their customers. they are only obligated to the extent that the underlying licensee has met its obligation.

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[234] *See* 47 C.F.R. §20.18(a).

[235] *Seventh Report on Wireless Competition* at 30. In addition there is typically a need to obtain a handset that is compatible with a particular pre-paid calling provider's service.

[236] *See* <http://www.freeup.com/> (visited Nov. 12, 2002).

[237] *Id.*

102. Finally. we seek comment on developing appropriate time frames for compliance should we decide to include pre-paid calling service providers in our E911 rules. **As** with resellers. we believe that should we decide to require pre-paid calling senice providers to comply with our rules. only a short transition appears necessary.

6. Disposable Phones

103. Summarv. We next seek comment on tlie provision of access to emergency services by consumers who purchase disposable mobile handsets. As 3 new product offerin;. tlie Commission has little information on these devices and below we encourage cominenters. among other things. to provide us informarion on these handsets and the services the! use.

104. Backcround. Disposable mobile handsets are low cost and either recyclable. rechargeable or disposable once the allotted airtime is used.[238] Tlir Inner cost and simplicity of use are achieved by limiting the features available on the handset. for instance tlie Hop-On disposable phone offers voice recognition dialing instead of keypad dialing.[239] Some of these pliones will only otler outbound calling. while others will allow customers to receive calls as well.[240] The voice service on these phones. in some instances, will be resold service."[241] Estimates are that companies will offer the handsets with approximarely 60 minutes of airtime for approximately $30.[242] Some marketing material on Hop-On's website indicates that they will distribute their phones through retail outlets. and will offer volume discounts to encourage their use as gifts at. for example. trade shows and corporate functions.[243] Apparently. however, such phones are not currently being offered on a widespread basis."[244]

105. Discussion. We begin by asking commenters to provide us with estimates on when these handsets may become available to consumers."[245] We next ash whether these phones. like resold offerings, are subscribed to a licensee's service. We also ask commenters to inform our technical understanding of this product. For example. we seek comment on wherher tlie disposable mobile handsets that are coming to market will be capable of providing callback information. Commenters should also address whether such handsets will be able to provide location information. If callback and location information are not currently part of the design of these handsets. we ask commenters to address the technical and economic feasibility of requiring disposable mobile handsets to comply with these rules. In discussing the economics of compliance. we also encourage cominenters to address whether the public interest in having E911-capable handsets is outweighed by tlie utility of such devices. should it be economically infeasible lor them to comply with our rules."[246] Additionally. we encourage commenters tu address whether disposable phones should fall within the scope of our "all-calls" rule. which requires tlie forwarding of all

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[238] *See* Jay Wrolstad. *Start-up Pirches Disposable Mobile Phones*, *Wireless NewsFactor*, <http://www.wirelessnewsfactor.com/perl/story/8181.html> (visited July 29. 2002). On July 25. 2002, the Commission approved Hop-On's CDMA-compatible disposable phone far use.

[239] *See* <http://www.hoponwireless.com/index html> (visited Nov 19. 2002)

[240] *See id.* (visited Nov. 19. 2002).

[241] *See supra* para. 93. *See also* <http://www hoponwireless.com/index.html> (visited Nov. 19, 2002)

[242] *See* Jay Wrolstad, *Start-up Pitches Disposable Mobile Phones*, *Wireless NewsFactor*, <http://www wirelessnewsfactor.com/perl/story/8181 html> (visited July 29, 2002).

[243] See < http://www.hoponwireless.com/businessops.html> (visited Nov. 12, 2002)

[244] *See* Michelle Singletary, *The Color of Money*, Washington Post. Nov. 7. 2002. at E3 (indicating rhar disposable phone offerings have been delayed due to technical changes and production problems)

[245] *Id*

[246] *See generally*, *E911 First Report and* **Order.** 11 FCC Rcd ai 18676

911 calls to a PSAP. regardless of whether tlie handset has a subscription with a mobile wireless carrier."[247]

106. *Legal Authority and Implementation Issues.* We also ask commenters to address tlie legal authority of the Commission to place basic and enhanced 911 requirements on manufacturers of disposable mobile handsets. In particular. we seek comment on whether requiring mobile wireless service providers to ensure that the handsets used to access their networks comply with our rules is sufficient or uherher we should place an affirmative duty on the manufacturers ofthese handsets.[248] Should we determine that the service provider should he required to comply with our rules. we seek comment on uhether, as we discussed above. the reseller or the licensee. should be required to ensure compliance.[249] In addition. to the extent that these handsels are capable of delivering callback and location information. we seek comment on how best to establish time frames for compliance with our E911 rules.

7. Automated Maritime Telecommunications Systems (AMTS)

107. Summary. We next seek comment on whether AMTS licensees should be required. like VHF Public Coast Carrier licensee,. to comply with our basic and enhanced 911 rules "to the extent that they offer land-based real-time two-way switched voice service that is interconnected to the public switched network."[250]

108. Background. An AMTS is a specialized system of coast stations providing integrated and interconnected marine voice and data communications. somewhat like a cellular phone system. for tugs. barges, and other vessels on waterways.[251] In 1997, the Commission adopted an Order that permitted VHF Public Coast licensees. including AMTS licensees. to provide land-based users with more services so that they would be better able to "compete against other CMRS providers. such as cellular. **PCS.** and SMR."[252] At that time. the Commission did not address whether these licensees should **be** included within the scope of our E911 rules."[253]

109. Discussion. We first seek comment on whether the customers of AMTS carriers have an expectation of being able to reach 911 emergency service personnel. In this regard. we seek coniment on whether. as we did in deciding that VHF Public Coast Station licensees must comply with our 911 rules. we should limit such a requirement to the *land-based* portion of AMTS providers' two-way switched voice service offerings. as there may be a clearer expectation with regards to land-based services.[254] In

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[247] *See* 47 C.F.R. § 20.18(b)

[248] *See supra* para. 91

[249] *See supra* para. 95

[250] *See* Implementation of911 Act. The Use of N11 Codes and Other Abbreviated Dialing Arrangements. *Fifth Report and Order*, CC Docket No. 92-105. *Firsr Report and Order*. WT Docket No. 00-110. *Memorandum Opinion and Order on Reconsideration*, CC Docket No. 92-105. WT Docket No. 00-110. 16 FCC Rcd 22264 (2001)

[251] *See* Amendmenl of Parts 2 and 80 oithe Commission's Rules Applicable to Auiomated Maritime Telecommunications Systems (AMTS). *First Report and Order.* RM-5712. 6 FCC Rcd 437 para 3 (1991)

[252] *See* Amendment ofthe Commission's Rules Concerning Maritime Communications, *Second Report and Order and Second Further Notice of Proposed Rule Making*, PR Docket No. 92-257, 12 FCC Rcd 16949, 16964-65 paras. 24-26 (1997); *see also* 47 C.F.R. § 80.123.

[253] ***See*** *also*, Amendmenl ofthc Commission's Rules Concerning Maritime Communications. *Second Memorandum Opinion and Order and Fifth Report and Order*. PK Docket No 92-257 17 FCC Rcd 6685. 6703 n 171 (2002) (stating "[n]either the Fifth R&O nor the present item addresses whether our 911 and enhanced 911 (E911) requirements apply or should apply to AMTS operations).

[254] *VHF Memorandum Opinion.* 16 *FCC* Rcd at 22286 para 59

the *VHF Memorandum Opinion*, the Commission relied on the fact that for maririme services. both VPC and **AMTS.** there exists well-establislicd emergency response systems that user of maritime services are familiar with and that comply with internationally mandated maritime communications safety standards.[255]

110. Lastly, assuming we decide to require compliance by AMTS carriers, we **seek** comment on the general time frames for deployment of E91 I capabilities. In this regard. we **ask** commenrers to address the technical and operational capabilities of these providers to deliver callback and location information.

8. Emerging Services and Devices

111. We seek comment generally on emergency access issues with respect to any other voice services and devices that are not meritioned above.

112. We are currently aware that carriers have begun marketing Personal Data Assistants (PDA) with voice capabilities. To the extent that these devices function as CMRS carrier handsets. we see no reason why such devices would not be required to comply with the Commission's 91 I and E91 I rules. Nor do we see any reason why purchasers of these devices would **not** expect to have access to 91 I and E91 I sen'ices. We seek comment on any obstacles CMRS providers may confront with assuring these devices provide access to 911 service.

113. We also seek comment on other new technological platforms. For example. services such as IP Telephony are not widely deployed. but may ultimately be relevant to our E91 I policies. The Commission recently received an independent report prepared by Dale Hatfield on various technical issues related to the deployment of E91 I.[256] As part of that report. Dr. Hatfield identifies potential technical issues that may arise with voice delivered using the Internet Protocol (VoIP) communicating the necessary call-back and location information to **PSAPs.** We seek comment on thr extent to which significant issues exist with regard to the access to 911 and E91 I capabilities by consumers using newly developing communications platforms such as IP Telephony. and what. if any, role the Commission should take regarding any such issues:.[257] In this regard. we appreciate the many benefits that new technologies bring to the public in terms of increased access and opportunities for all Americans. Our regulator) policies are designed to continue **to** cncourape tlir development of these capabilities. while also enhancing public safety.

114. We also **ask** commenters to discuss the pofential for these and other devices **to** act as a means of providing access to emergency services for individuals with speech 3rd hearing disabilities.

115. Finally, we **seek** comment on whether and how the Commission could structure its E91 I rules or similar requirements to encourape entry for these and other new device;, while taking into account the important public safety concerns relevant to our E911 policies. We encourage commenters to consider whether a rapidly evolving telecommunications market is best served by periodic rulemakings focused on a service-by-service analysis such as tlie one detailed above. or whether such markets could benefit from rules of more general applicability with parties seeking relief through other Commission

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[255] *See id. See also* Liz Chapman, *Coast Guard's Rescue 21 System to be Maritime 911*, available at <http://www.bangornews.com/editorialnews/article.cfm?ID=74350&byline=LizChapman&cname=Statewide&section=Hancock&tt=10AM> (visited Oct. 11, 2002).

[256] *See generally* Dale N. Hatfield, *A Report on Technical and Operations Issues Impacting the Provision of Wireless Enhanced E911 Services*, Public Notice, DA 02-2666 (*Hatfield Report*).

[257] *See* Comments of NENA, APCO. and NASNA on Hatfield Report at 6

procedures such as waivers or petitions for clarification

IV. PROCEDURAL INFORMATION

A. Initial Regulatory Flexibility Analysis

116. As required by the Regulatory Flexibility Act. *see* 5 U.S.C. § 603. the Commission has prepared an Initial Regulatory Flexibility Analysis ("IRFA") of the possible significant economic impact on small entities of the proposals suggested in this *Further Notice* The IRFA is set forth in Appendix B. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same tiling deadlines as comments filed in this *Further Notice*. aiid must have a separate and distinct heading designating them as responses to the IRFA.

B. Paperwork Reduction Analysis

117 This *Further Notice* contains potential new or revised information collections. As part of the Commission's continuing effort to reduce paperwork burdens. we will establish. through *Federal Register* publication, a period for public coniment on these burdens. as required by the Paperwork Reduction Act of 1995[258] when tlie final rules are adopted and more specific data is available as **to** which services will be affected by what regulations. The Commission will consider these comments before the final rules become effective and before the Commission seeks OMB approval Ior these burdens.

C. Ex Parte Presentations

118. Ihis is a permit-but-disclose notice and comment rule making proceeding. Members of the public are advised that **ex** parte presentations are permined, except during the Sunshine Agenda period. provided they are disclosed under the Commission's Rules.[259]

D. Comment Dates

119. Pursuant to Sections 1.415 and 1.419 of the Commission's Rules. 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comnients on or before **February** 3, **2003** and reply comments on or before **February 28, 2003.** Commenrs may he filed using tlie Commission's Electronic Comment Filing System (ECFS) or by filing paper copies.

120. Comments filed through **tlie** ECFS can be sent as an electrunic file via tlie Internet to http://www.fcc.gov/e-file/ecfs.html. Generally, only one copy of an electronic submission must be filed. **If** multiple dochet or rulemaking numbers appear in the caption of this proceedin?. however. commenrers must transmit one electronic copy of the comments to each dochet or rule making number referenced in the caption. In completing the transmittal screen. commenters should include their full name. U.S. Postal Service mailing address. and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments. cominenters should send an E-mail to ecfs@fcc.gov, and should including the following words in tlie body of the message. "get form <your e-mail address>." **A** sample form and directions will be sent in reply.

121. Parties who choose to file by paper must tile an original and four copies of each filing. If more than one docket or rule making numher appear in the caption of this proceeding, commenters must submit two additional copies for each additional docket or rule making number. Filings can be sent by hand or messenger delivery, by commercial overnight courier. or by first-class or overnipht U.S. Postal

[258] *See* Pub. L. No. 104-13.

[259] *See generally* 47 C.F.R. §§ 1.1202, 1.1203, 1.1206(a)

Service mail (although we continue to experience delays in receiving U.S. Postal Senice mail). The Commission's contractor. Vistronix, Inc., will receive hand-delivered or messenger-delivered paper filings for the Cornmission's Secretary at 236 Massachusetts Avenue. N.E.. Suite 110. Washington, DC 20002. The filing hours at this location are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. Commercial overnight mail (other than U.S. Postal Senice Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive. Capitol Heights, MD 20743. U.S. Postal Senice first-class mail. Express Mail. and Priority Mail should be addressed to 445 12th Street. SW, Washington. DC 20554. All filings must be addressed to the Commission's Secretary, Office of the Secretary. Federal Communications Commission. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center ot the Federal Communications Commission. Room TW-A306. 445 12th Street. S.W., Washington, D.C. 20554.

122. Parties who choose to file by paper should also submit their comments on diskette. These diskettes should be submitted to the Commission's Secretary, Marlene H. Dortch Office of the Secretary, Federal Communications Commission The Commission's contractor. Vistronix, Inc., will receive hand-delivered or messenper-delivered diskette filings for the Commission's Secretary at 236 Massachusetts ,Avenue. N.E., Suite 110, Washingtor, DC 20002. The filing hours at this location are 8:00 a.m. lo 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive. Capitol Heights, MD 20743. U.S. Postal Service first-class mail, Express Mail. and Priority Mail should be addressed to: 445 12th Street, SW, Washingon, DC 20554. All filings must be addressed to the Commission's Secretary. Office of the Secretary, Federal Communications Commission. Such a submission should be on a 3.5-inch diskette formatted in an IBM compatible format using Word for Windows or compatible software. The diskette should be accompanied by a cover letter and should be submitted in "read only" mode. The diskette should be clearly labeled with the commenter's name. the docket number of this proceeding. type of pleading (comment or reply comment). date of submission. and the name ot the electronic tile on the diskette. The label should also include the following phrase "Disk Copv - Not an Original." Each diskette should contain only one party's pleading, preferably in a single electronic file. In addition, commenrers must send diskette copies to the Commission's copy contractor. Qualex International, Portals II, 445 12th Street, S.W.. Room CY-B402, Washington. D.C. 20554.

123. Accessible formats (computer diskettes. large print. audio recording and Braille) are available to persons with disabilities by contacting Brian Millin, of the Ccnsumer & Governmental Affairs Bureau, at (202)418-7426, TTY (202) 118-7365. or at bmillin@fcc.gov. This Further Notice can be downloaded in ASCII Text format at: http://www.fcc.gov/wtb.

E. Further Information

124. For further information concerning this *Further Notice of Proposed Rulemaking*, contact: Gregory W. Guice, Attorney Advisor. Policy Division. Wireless Telecommunications Bureau. at (202) 418-0095; David Siehl, Attorney Advisor. Policy Division. Wireless Telecommunications Bureau. at (202) 4 18-1313: or Arthur Lechtman. Attorney Advisor. Policy Branch. Satellite Division. International Bureau. at (202) 418-1465.

V. ORDERING CLAUSES

125. IT IS ORDERED, that pursuant to Sections 1, 4(i), 7, 10, 201, 202, 208, 214, 222(d)(4)(A)-(C), 222(f), 222(g), 222(h)(1)(A), 222(h)(4)-(5), 251(e)(3), 301, 303, 308, 309(j), and 310 of the Communications Act of 1934, as amended, 47 U.S.C.§§ 1jl, 154(i), 157, 160, 201, 202, 208, 214, 222(d)(4)(A)-(C), 222(f), 222(g), 222(h)(1)(A), 222(h)(4)-(5), 251(e)(3), 301, 303, 308, 309(j), 310, this *Further Notice of Proposed Rulemaking* is hereby ADOPTED

126. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau. Reference Information Center, SHALL SEND a copy of this Further Notice of Proposed Rulemaking. including the Initial Regulatory Flexibility Analysis. to rhe Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary